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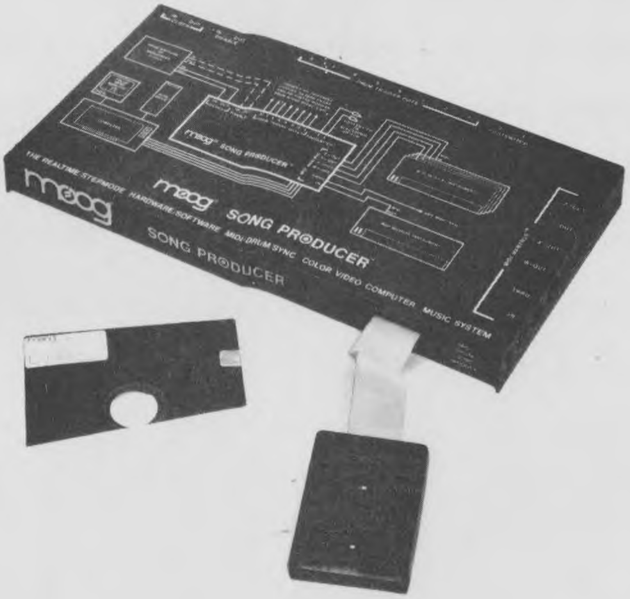
OWNER'S MANUAL
for
moog® SONG PRODUCER

by
TOM RHEA


moog
SONG PRODUCER
THE REALTIME/STEPMODE HARDWARE/SOFTWARE MIDI-DRUM SYNC COLOR VIDEO COMPUTER MUSIC SYSTEM
moog
SONG PRODUCER

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INTRODUCTION
&
DESIGN PHILOSOPHY

The functions and forms of acoustic musical instruments are dictated by the availability of the technologies used to construct them. Gong sounds owe their existence to the metallurgist; clarinet sounds to the woodsmith and machinist.

For acoustic instruments, form necessarily follows function, because these instruments are made from physical stuff that must vibrate in order to create a sound. You don't expect to produce gong sounds using a clarinet, or vice versa.

The size, shape, and other physical characteristics of the materials used to make an acoustic instrument are determined by the kind of sound we want to make with the instrument. Acoustic instruments are hardware-oriented.

When the dominant new technology of the late Nineteenth century, electricity, came to the forefront, and evolved into modern electronics, musical instruments shared the radicalizing influence of these technologies.

Both the form and the function of a musical instrument that uses electricity is less dependent on the instrument's hardware. The sound made by such an instrument no longer necessarily depends on the resonance characteristics of the materials used to construct it.

Electrical musical instruments have always been oriented more toward software, or "programming," of their constituent elements than their acoustic cousins. Even older vacuum tube instruments had electrical components such as tubes, capacitors, coils, and resistors that could be made to produce many different sounds, without changing the actual physical characteristics of the components.

A giant step in the evolution of instruments toward reliance on software rather than hardware was the introduction of voltage control. Bob Moog and Don Buchla are owed a debt of gratitude for pioneering its application to musical instruments.

Nowadays, we think nothing of producing both gong-like and clarinet-like sounds using a musical instrument that has a keyboard! Clearly, for electronic musical instruments, form need no longer follow function.

The evolution of electronics into computer technology has spawned an even more-potent agent to sever the traditional binding of sound to the material. The computer.

The computer is nothing if not programmed, or driven by software. The computer is, at its best, an amplifier of intelligent decisions. That is, it is less important that a computer can MAKE sound, than it is that a computer allows a COLLABORATION between the musician and a technology that amplifies his/her thoughts and musical gestures.

This is certainly how we think of the computer-based music system, the Moog Song Producer T.M. The Song Producer is described as a realtime/stepmode hardware/software MIDI/drum/sync color video computer music system.

INTELLIGENT SOFTWARE

The Song Producer is all those things, but, perhaps the crucial word is software. That is what makes a computer intelligent.

Bob Makar wrote all the software for the Song Producer. This software had its genesis in the collaboration between two musicians, Bob Makar and his brother Tom. The Makars sought to design a system that would let them join the synthesizer revolution, though neither is a virtuosic keyboard player.

Bob's skill as a computer programmer, and the combined musical experience of the brothers, forged a system capable of programming and expressing the ideas of a songwriter--a Songstepper, if you will.

An important strength of the Makars' Songstepper concept is its total INTEGRATION of what it takes to produce a song. This composer's program allows you to PROGRAM/PERFORM, SEE, HEAR, EDIT, and PRINT drums and music, and SAVE an entire song on diskette.

Because all elements reside in ONE memory (the computer's), this system lets you SEE and EDIT any element immediately. You do not have to "go through the whole song" to spot a particular musical idea. Editing is a joy, not a pain.

Song Producer software has been human engineered. It presents messages on the screen that "prompt" your next step. Its orientation is VISUAL; you "get the picture" of what you are doing very quickly and easily.

Each Song Producer software program is designed to reside completely within computer memory. Intensive use of the disk drive for any Song Producer software program is NOT required. The disk drive is used for permanent storage only.

The software is designed as a "user friendly," but EXPERT system. That is, you need only a few commands to make music. And the command structure is designed around "mnemonics" that help you remember which key provides which command.

But we have not restricted the NUMBER of commands unduly, since many of the commands facilitate SPEED in achieving a particular goal once you are FAMILIAR with the system. The system rewards the user who is capable of mastering these commands. We have not restricted power to facilitate an easy introduction.

PERFORMANCE FOR THE PERFORMER

The Song Producer is the first music product of the new Moog corporation, Moog Electronics, Inc.

The roots of the new company are embedded in the bedrock of the experience gained by Moog Music, Inc. concerning the musician's needs in performance, where music is made in "real time."

This concern for live performance shaped the software package for the Song Producer. The capability for entering musical lines in realtime was added to Songstepper.

A completely new software package for the multikeyboardist, MIDI Command, was developed, to make the Song Producer a powerful tool for those with excellent keyboard skills.

MIDI AND SONG PRODUCER

The Song Producer is an interface that offers exquisite control over MIDI (Musical Instrument Digital Interface) instruments such as keyboards, expanders, drum machines, and sequencers.

Song Producer solves some of the problems that plague the MIDI standard today, and provides an avenue for easy expansion in the future.

For instance, Song Producer uses the computer to speed the "throughput" of massive amounts of MIDI information. Song Producer has the MIDI MANYBUS T.M., with multiple MIDI buses, currently with a total of 12 MIDI channels in Songstepper. MIDI data can be speeded to instruments on separate paths, without slowing the data stream on any single bus significantly.

The MANYBUS arrangement also allows easy use of MIDI instruments in the MIDI OMNI mode, without regard to questions about "channel" compatibility.

MIDI drum machines can be controlled using the MIDI Drum Songstepper software. Some drum machines that do NOT have MIDI capability may be used with the Song Producer, due to the inclusion of the DRUM TRIGGER OUTS jacks. These jacks provide general purpose triggers/clocks that may be used to trigger/sync a wide variety of devices.

COMPUTER COMPATIBILITY

The Song Producer is compatible with the the Commodore 64 computer, including both C-64 and portable models. (Commodore 64 is a registered Trademark of

Commodore Electronics, Ltd.)

We chose to make the Song Producer compatible to a non-proprietary computer (one NOT built by Moog). This means you can use your (music) computer for all the other things the computer can do for you. There are literally thousands of software programs available for this brand/model of computer.

It also means that "third party" software can be written for the Song Producer. You are not entirely at the mercy of one music company to produce software you want. It is easy to program on the Commodore. Perhaps YOU will write the first new software program for Song Producer hardware!

There are millions of Commodore 64 computers in the world. You will always be able to get one. Service is available nearly anywhere. It is a very inexpensive model. And a proven workhorse.

Neither hardware nor software is a dead end with the Song Producer.

SEE WHAT YOU GET

Video is a very important part of the Song Producer system. Color video is provided for each aspect of each software program.

The system is capable of showing you what you play or program; how you have split/layered your keyboard stack; organized your score; transposed your sequences, etc. etc.

Neither color nor a computer monitor is required. You can use your black and white TV set if you wish.

WHERE IT IS GOING

At Moog Electronics, we believe that buying a new interface for each piece of music software you get is like having to buy a different computer for each piece of software you get!

The Song Producer offers an OPEN SYSTEM. It uses a commercially available computer that thousands can program. Moog has published the information necessary to FACILITATE others writing software for Song Producer hardware (see service data).

The system is disk-based, NOT ROM-based. You can load NEW programs and use the hardware without tearing the hardware apart.

The hardware interface provides MORE HARDWARE. More MIDI and NON MIDI jacks provide more lines of communication, especially for future software development.

USING THIS MANUAL

Please read the GETTING STARTED section of this manual before you get started!

After you feel you can get started, read the MASTER MENU section for a description of each software program.

There is an INTRODUCTION section in this manual for each major software program:

SONGSTEPPER INTRODUCTION

MIDI COMMAND INTRODUCTION

SYNC COMMAND INTRODUCTION

Each INTRODUCTION is a step-by-step tutorial that gets you to programming, playing, or exercising the software.

There are two reference sections included within the manual:

SONGSTEPPER & MIDI DRUM SONGSTEPPER
DICTIONARY OF COMMANDS

MIDI COMMAND HELP PAGE GLOSSARY.

The DICTIONARY and GLOSSARY reference sections are printed on different colors of paper to provide quick recognition and easy access.

The DICTIONARY OF COMMANDS contains explanations of all SONGSTEPPER & MIDI DRUM SONGSTEPPER commands, in alphabetical order.

The HELP PAGE GLOSSARY contains explanations of the commands for MIDI COMMAND, in the order they appear on the HELP PAGE video for that software.

Refer to the appropriate reference section after you complete the INTRODUCTION to a particular piece of software, to learn more about the software.

Read the DICTIONARY OF COMMANDS and the HELP PAGE GLOSSARY. It will keep you busy for a while!

The Moog Song Producer is dedicated to everyone who IS or wishes to be a SONG PRODUCER. Share it with your friends.

Tom Rhea

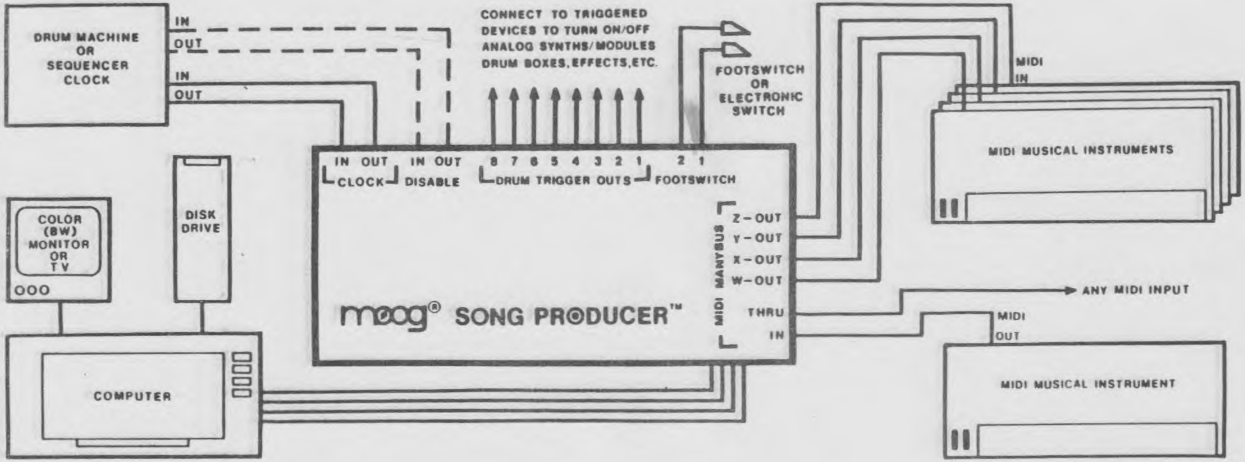
GETTING STARTED

IN OUT
CLOCK

IN OUT
DISABLE

8 7 6 5 4 3 2 1
DRUM TRIGGER OUTS

2 1
FOOTSWITCH


DRUM MACHINE OR SEQUENCER CLOCK
IN
OUT
IN
OUT
CONNECT TO TRIGGERED DEVICES TO TURN ON/OFF ANALOG SYNTHS/MODULES DRUM BOXES, EFFECTS, ETC.
FOOTSWITCH OR ELECTRONIC SWITCH
MIDI IN
MIDI MUSICAL INSTRUMENTS
COLOR (BW) MONITOR OR TV
DISK DRIVE
IN OUT
CLOCK
IN OUT
DISABLE
8 7 6 5 4 3 2 1
DRUM TRIGGER OUTS
2 1
FOOTSWITCH
MIDI MANYBUS
Z-OUT
Y-OUT
X-OUT
W-OUT
THRU
IN
moog® SONG PRODUCER™
ANY MIDI INPUT
MIDI OUT
COMPUTER
MIDI MUSICAL INSTRUMENT

MIDI MANYBUS™

Z-OUT

Y-OUT

X-OUT

W-OUT

THRU

IN

moog® SONG PRODUCER™

THE REALTIME/STEPMODE HARDWARE/SOFTWARE MIDI/DRUM/SYNC COLOR VIDEO COMPUTER MUSIC SYSTEM

GETTING STARTED

THIS SECTION TELLS YOU HOW TO CONNECT THINGS TO GET GOING, HOW TO INTERPRET INSTRUCTIONS TO USE THE KEYBOARD, AND HOW TO FORMAT DATA DISKETTES NECESSARY TO STORE YOUR SONGS OR MIDI COMMAND PAGES.

Please read the INTRODUCTION section before reading this section.

CONNECTING THE SONG PRODUCER CABLE TO THE SONG PRODUCER INTERFACE

Remove the Song Producer from its protective plastic bag.

Fill out the enclosed WARRANTY and mail it to Moog Electronics, Inc.

There are two parts to the Song Producer hardware: the metal interface box, and a flat cable attached to a plastic housing. You must attach this cable to the metal box:

Locate the EXPANSION PORT, an opening on the right front of the metal interface box.

Look at the multi-pin connector in the EXPANSION PORT.

Open the fasteners found at each END of the multi-pin connector in the EXPANSION PORT.

Notice that the multi-pin connector has TWO SLOTS on its BOTTOM.

Look at the end connector of the flat connector cable. The end connector is at the opposite end of the cable from the large plastic housing with "TOP" embossed on it.

Notice that the end connector of the flat cable has TWO TABS.

CAREFULLY orient the TWO TABS of the end connector on the flat cable to the TWO SLOTS on the multi-pin connector in the EXPANSION PORT.

The flat cable should not be twisted, and the word "TOP" on the housing at the OTHER END of the cable should face UP as you make this connection.

Gently push the connectors together.

Look to see that the connectors are fitting properly.

Push firmly enough to cause the FASTENERS at each end to close around the end connector of the cable. Help them do so.

CONNECTING THE SONG PRODUCER TO THE COMPUTER

The Song Producer is designed to be connected to the EXPANSION PORT of a COMMODORE 64 computer. (Commodore 64 is a registered Trademark of Commodore Electronics, Ltd.)

This port is found on TOP of the portable model, and on the REAR of the C-64 model on the FUNCTION KEYS side.

Locate the EXPANSION PORT on your computer.

Orient the TOP of the plastic housing at the free end of the flat cable FACING YOU if you have a portable model, or UP if you have the other model.

Gently push the plastic housing into the EXPANSION PORT. See that the "edge" connector in the housing mates with the connector in the EXPANSION PORT.

CONNECTING THE DISK DRIVE TO THE COMPUTER TO THE MONITOR TO THE PRINTER

As the title implies, you daisy-chain devices together in the Commodore 64 system.

Look at the ends of the cables provided with the computer.

Look at the various jacks on the back of each device.

SEE YOUR COMMODORE MANUAL FOR FULL DETAILS FOR MAKING CONNECTIONS, OR ASK YOUR DEALER FOR DETAILS.

POWERING UP

The Song Producer (MIDI/DRUM/SYNC MODULE) draws its power from the computer.

If you have a PORTABLE model:

Turn it ON, using the switch in the rear.

The various components of the NON-PORTABLE model must be turned on in a PARTICULAR sequence:

Turn the MONITOR, DISK DRIVE and other peripherals (PRINTER) ON FIRST.

THEN turn the COMPUTER ON LAST.

(Turn OFF IN REVERSE ORDER.)

INSERTING A DISKETTE

NEVER TOUCH THE "RECORD" INSIDE THE DISKETTE COVER. PROTECT THE DISKETTE FROM DUST, DIRT, PEANUT BUTTER, MAGNETIC FIELDS, ETC. DO NOT, FOR INSTANCE, LAY A DISKETTE ON TOP OF THE TELEVISION OR MONITOR, OR A DISK DRIVE, OR YOUR AMPLIFIER. DISKETTES ARE SENSITIVE TO MAGNETIC FIELDS!

If you don't have a blank 5-1/4 inch diskette, GET ONE!

YOU MAY SKIP THIS STEP FOR THE TIME BEING IF YOU HAVE NO BLANK DISKETTE, BUT YOU WILL BE UNABLE TO SAVE YOUR SONGS OR MIDI COMMAND PAGES ON A DISKETTE. YOU MAY NOT SAVE ANYTHING ON THE MASTER PROGRAM DISKETTE SUPPLIED WITH THE SONG PRODUCER.

Let's assume you DO have a blank diskette. Let's insert it in the disk drive:

Open the disk drive door by pushing IN on the door and releasing.

Grasp the diskette lightly between your fingers and thumb, WITH THE LABEL UP AND TOWARD YOU.

Orient the diskette with the SLOT in front of the center hole, aimed directly toward the opening of the disk drive.

Gently insert the diskette into the disk drive.

Check to see that the LABEL ON THE DISKETTE IS UP AND TO THE RIGHT SIDE OF THE DISK DRIVE OPENING.

Push the diskette in far enough to engage a spring CATCH. DON'T CRUMPLE, SPINDLE, BEND, MUTILATE, ETC. THE DISKETTE!!!

Pull the latch on the disk drive door STRAIGHT DOWN to lock the drive door.

NOW TAKE THE DISKETTE OUT! (NECESSARY PRACTICE.)

Push STRAIGHT IN on the drive door latch.

The diskette should POP OUT slightly.

Take the diskette out, GENTLY.

REFERENCES TO THE COMPUTER KEYBOARD

Any reference in this manual to a key on the computer keyboard appears as a number, symbol, or in CAPITAL letters surrounded by brackets [ ].

For example, [4] refers to the specific key numbered "4" and 4 (without brackets) refers to the numeral four.

Sometimes a SINGLE computer key has a whole word on it; [RETURN] is an example.

Sometimes a SINGLE computer key has several words on it. [RUN STOP] is an example of such a key.

Most references to keys are bracketed, and indicate a SINGLE key. On the other hand, in this manual, if you are asked to type LOAD, with no brackets indicated, you must type in the FOUR letters [L], [O], [A] and [D] individually.

CAPITALIZATION AND USE OF THE [SHIFT] KEY

Notice that letters on the computer keyboard are CAPITALS. You do NOT have to use the [SHIFT] key to create a capital letter, unlike a typewriter.

So, ignore the distinction normally made on a typewriter keyboard between upper and lower case letters.

That is, do NOT try to create a capital LETTER by using the [SHIFT] key. The alphabet keys on the computer keyboard ARE capital letters, all of the time.

USING TWO KEYS TOGETHER

Often, a command REQUIRES use of one key in conjunction with another key. This is shown like this:

[RUN STOP][RESTORE]

In the example above, the RESET command, you first type the [RUN STOP] key.

While holding the [RUN STOP] key down, you then type the [RESTORE] key, so BOTH keys are down together.

If you accidentally type the [RESTORE] key first, you will give the wrong command. Type and HOLD the first bracketed key, then type the other bracketed key.

DISTINCTION BETWEEN ZERO AND THE LETTER "O"

In this manual the numeral zero has a slash through it: 100, 101, 102, etc. The letter O has no slash.

PROMPTS: MESSAGES FROM SONG PRODUCER

SONG PRODUCER carries on a conversation with you. It can give you messages on the screen that "prompt" action on your part. Sometimes the message has an element that changes; this will be shown in the manual using dashes "-----".

FORMATTING A DATA DISKETTE

To format a data diskette so it can store your songs or MIDI COMMAND PAGES, do the following:

Take any diskette out of the drive.

Turn the COMPUTER OFF (the component with the typewriter keyboard).

With NO diskette in the disk drive, turn the POWER to the computer ON. You must start "cold," with the power first OFF, then turn it ON.

Put a new, "blank" diskette in the disk drive as practiced previously. Close and latch the drive door.

Type the following:

```
OPEN15,8,15,"N0:----------------,--"
```

You must enter EXACTLY what is shown above, or you will get a SYNTAX ERROR.

Notice that there are NO SPACES typed.

CAPITAL letters shown above must be typed individually, and DO NOT require use of the [SHIFT] key. OPEN uses the letter O.

The " quote mark DOES require use of the [SHIFT] key.

The character next to the N is a ZERO.

Use the [INST DEL] key to correct mistakes.

If you need to, remove the diskette, turn the computer OFF, and start over!

The first group of dashes "----------------" following the colon is a field for UP TO 16 alphanumeric characters for this diskette's name. Type 16 OR FEWER letters and numbers, but NO PUNCTUATION MARKS for this name.

Then comes a comma.

The last group of dashes "--" following the comma is another system alphanumeric name. Type letters, numbers or both, but NO PUNCTUATION marks. This last name SHOULD be unique for each diskette you use.

The " quote mark closes the group.

MAKE SURE you have typed all characters above correctly.

THERE SHOULD BE NO SPACES AND NO DASHES, JUST LETTERS, NUMBERS AND PUNCTUATION MARKS EXACTLY AS PRESCRIBED.

Correct using the [INST DEL] key.

Then, type [RETURN]

The computer will properly format the diskette. It takes about 90 seconds. No not disturb until the disk drive light goes OFF!

WRITE BOTH NAMES ON A STICKER AND STICK IT ON THE DISKETTE FOR IDENTIFICATION. DON'T PUT THE STICKER ON, AND THEN WRITE. YOU MAY DAMAGE THE DISKETTE.

TO VERIFY THAT FORMATTING TOOK PLACE:

Take the diskette out of the disk drive.

Turn the computer OFF, then ON.

Put the diskette back into the disk drive.

Type:

```
LOAD"$",8
```

Then type [RETURN]

Then type [L] then [I] then [S] then [T]

Then type [RETURN]

You should soon see a message and the name of your diskette.

THIS VERIFIES THAT FORMATTING HAS BEEN DONE.

THIS DISKETTE IS NOW A "DATA" DISKETTE CAPABLE OF STORING YOUR SONGS OR MIDI COMMAND PAGES. MAKE SEVERAL AND KEEP THEM AROUND!

COPYING THE MASTER PROGRAM DISKETTE

The diskette with the Moog label supplied with the Song Producer is the MASTER PROGRAM DISKETTE.

THE MASTER PROGRAM DISKETTE HOLDS ALL OF THE COMPUTER SOFTWARE PROGRAMS SUPPLIED WITH SONG PRODUCER. IT IS VERY IMPORTANT!! YOU CANNOT USE SONG PRODUCER SOFTWARE IF YOU TRASH THIS DISKETTE!!

So, make a COPY of the MASTER PROGRAM DISKETTE. That's right. Song Producer software is NOT "copy protected." (We would appreciate a short round of applause from you computer types who realize what this convenience means to our customers!)

You may use any COPYING PROGRAM to copy the MASTER PROGRAM DISKETTE that you know WORKS.

Or you may use the handy ORDER FORM included with this manual and BUY a copy of the MASTER PROGRAM DISKETTE from the Moog Service Department. Please send PROOF OF PURCHASE and the serial number of your Song Producer with your order!!!

Use the COPY, and hide the MASTER PROGRAM DISKETTE in a Hellman's Mayonnaise jar under Funk & Wagnall's porch!

If you don't have a COPY right now, use the MASTER PROGRAM DISKETTE. But get a COPY made ASAP!

CONNECTING INSTRUMENTS TO THE SONG PRODUCER

There are TWO kinds of jacks, or connectors, on the Song Producer:

1/4 " phone jacks

MIDI (DIN) jacks

DRUM MACHINE CONNECTIONS

If you do NOT have a drum machine:

Connect the DRUM TRIGGER OUTS jack #2 to a channel on your amp or recording board. Keep the level low!

If you DO have a MIDI drum machine:

Connect the drum machine MIDI IN to the W-OUT jack on the Song Producer, using a STANDARD MIDI cable.

MIDI cables that STRICTLY CONFORM to the MIDI specification are available from the Moog Service Department in any length, measured in whole feet.

Place the drum machine in its NON SYNC mode. Many brands are in this mode when first turned ON. We don't want to use the drum machine's clock or internal memory. We are only TRIGGERING its sounds.

If you have a NON-MIDI drum machine:

Connect DRUM TRIGGER OUTS jacks #1, #2, #6, and #8 to GATE INPUTS on the drum machine, using standard MONO patch cables.

Program the drum machine to play:

OPEN HI HAT = GATE INPUT CONNECTED TO #1

CLOSED HI HAT = GATE INPUT CONNECTED TO #2

SNARE DRUM = GATE INPUT CONNECTED TO #6

BASS DRUM = GATE INPUT CONNECTED TO #8

Put the drum machine to its NON SYNC mode. Many models are in this mode when first turned ON. We don't want to sync, we want to TRIGGER sounds directly.

If these instructions present a problem, use the procedure above for NO drum machine.

MIDI KEYBOARD CONNECTIONS

Connect the MIDI OUT of your primary keyboard to the MIDI IN of the Song Producer.

Connect X-OUT on the Song Producer to the MIDI IN of this same (primary) keyboard.

If you have another MIDI keyboard, connect Y-OUT to the keyboard's MIDI IN.

If you have a channel-assign MIDI expander or MIDI keyboard, connect Z-OUT to its MIDI IN.

LOADING THE MASTER MENU

The MASTER MENU lists the software programs you may use with the Song Producer. The only way to access the MASTER MENU is through a "cold start."

Turn the COMPUTER OFF.

Turn the COMPUTER ON.

Insert your COPY of the MASTER PROGRAM DISKETTE.

Close disk drive door.

Type:

```
LOAD"*",8,1
```

Type exactly what you see above. Use the [INST DEL] key to delete the last entry on the screen if you make a typing error. The " quote mark is the ONLY character above that requires use of the [SHIFT] key.

When you have on the screen what is shown above:

Type [RETURN].

The MASTER MENU appears.

IF THE MASTER MENU IS NOW ON THE SCREEN, GO TO THE MASTER MENU SECTION IN THIS MANUAL IN ORDER TO PROCEED.

If you get a "syntax error":

Remove the diskette from the drive.

Turn the computer OFF.

Turn the computer ON.

Try again! Type carefully.

HOW COMPUTER "MEMORY" WORKS

Everything in the computer's memory is erased and lost if you (or the utility company) turn the power to the computer OFF, even momentarily.

But, don't panic. You will learn that the disk drive may be used to "SAVE" your creations. Save to diskette as often as you feel is necessary. A loss of memory does NOT cause a loss of creations saved on diskette.

A WORD ABOUT THE RESET COMMAND

If, during your use of the computer seem to experience a "hangup" where the computer will absolutely refuse to take your commands:

Type and HOLD the [RUN STOP] key.

While holding [RUN STOP] down, type the [RESTORE] key.

Answer any prompt that appears.

Try again.

If a message on the screen that asks

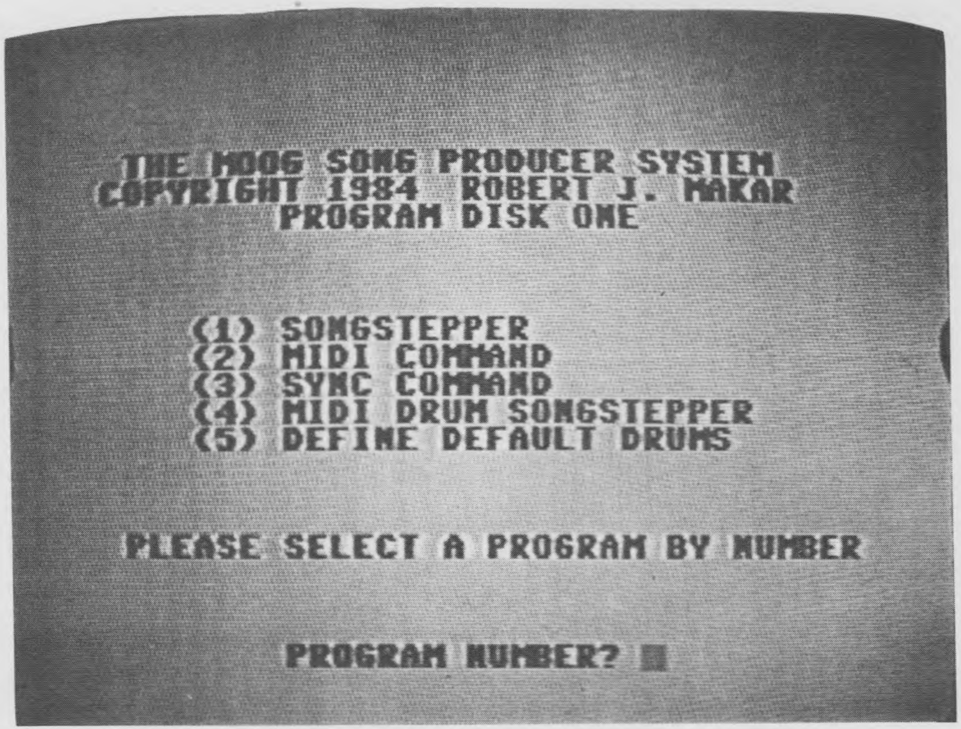
DO YOU WANT TOO KEEP ------ IN MEMORY?

you will ERASE everything in memory if you type [N] then [RETURN]. This is OK if you really DO wish to erase memory and start over.

USE THE RESET COMMAND [RUN STOP][RESTORE] ONLY AS A LAST RESORT.

PROCEED IMMEDIATELY TO THE MASTER MENU SECTION OF THIS MANUAL.

MASTER MENU



```
THE MOOG SONG PRODUCER SYSTEM
COPYRIGHT 1984  ROBERT J. MAKAR
PROGRAM DISK ONE

(1) SONGSTEPPER
(2) MIDI COMMAND
(3) SYNC COMMAND
(4) MIDI DRUM SONGSTEPPER
(5) DEFINE DEFAULT DRUMS

PLEASE SELECT A PROGRAM BY NUMBER

PROGRAM NUMBER? █
```

THE MASTER MENU

THE MASTER MENU DISPLAYS THE CHOICES OF SOFTWARE PROGRAMS AVAILABLE WHEN THE SONG PRODUCER SYSTEM IS FIRST LOADED. THE CHOICES ARE:

(1) SONGSTEPPER

(2) MIDI COMMAND

(3) SYNC COMMAND

(4) MIDI DRUM SONGSTEPPER

(5) DEFINE DEFAULT DRUMS

Please read the part of this manual titled "GETTING STARTED" before reading this section.

DESCRIPTION OF SONG PRODUCER SOFTWARE PROGRAMS

The SONG PRODUCER provides powerful software for COMPOSITION (1) and (4), PERFORMANCE (2), and SYNCHRONIZATION (3).

The DEFINE DEFAULT DRUMS (5) software is a utility that provides a template for user-selection of drum machine sounds.

SONGSTEPPER (1) & MIDI DRUM SONGSTEPPER (4)

Both of these programs provide STEP MODE programming of drums and eight voices of music, with full CLOCK OUT/IN sync capabilities as well. Each program also provides for REALTIME entry of monophonic musical lines.

The most important distinction between these two composition programs is in the control/playing of the drum machine.

SONGSTEPPER provides for control over EIGHT drum sounds triggered via the DRUM TRIGGER OUTS 1-8.

To trigger drum sounds, these OUTS must be connected, using a standard patch cable, to the GATE INPUTS of a drum machine.

Since SONGSTEPPER generates general purpose "V-triggers" a variety of devices might be triggered via connection to the DRUM TRIGGER OUTS on the SONG PRODUCER.

MIDI DRUM SONGSTEPPER provides for control over SIXTEEN drum sounds via the W-OUT MIDI output on the SONG PRODUCER. Triggers may be output via the DRUM TRIGGER OUTS as well, using this program.

To trigger drum sounds, W-OUT must be connected, using a standard MIDI cable, to the MIDI IN of a drum machine.

This mode of playing the drum machine does NOT necessarily use the drum machine's memory or clock. It merely triggers its sounds. For ordinary use, set controls on the drum machine so the unit's memory, clock, or SYNC function is NOT engaged.

MIDI COMMAND (2)

MIDI COMMAND provides control over the MIDI PROGRAM number and transposition of at least FOUR slave instruments.

Connect the MIDI IN of these instruments to the W-OUT, X-OUT, Y-OUT, and Z-OUT MIDI outputs on the SONG PRODUCER.

Furthermore, MIDI COMMAND can provide EIGHT split/layer points for a master keyboard to create split/layered sounds in conjunction with the slave keyboards. Connect the MIDI OUT of this master instrument to the single MIDI IN on the SONG PRODUCER.

ONE HUNDRED such split/layer PAGES may be held in memory at one time. EACH PAGE may contain up to EIGHT QUADSETS, or group of FOUR MIDI PROGRAM NUMBERS for control of slave instruments.

SYNC COMMAND (3)

SYNC COMMAND creates an INTERNAL clock that is divided to provide many SYNCHRONIZED clock signals.

These PULSES PER QUARTER NOTE clocks may be used to sync various devices, such as drum machines, sequencers, etc.

These clocks appear at the W-OUT, CLOCK OUT, and DRUM TRIGGER OUTS jacks. Standard 192, 96, 48, and 24 PULSES PER QUARTER NOTE clocks are available, as well as a variety of other clocks.

This program provides a wide span of master clock speeds with excellent resolution, for powerful control over the TEMPO of your song.

This program will also DIVIDE an external PULSES PER QUARTER NOTE clock connected to the CLOCK IN of the SONG PRODUCER to provide many clocks with different PULSES PER QUARTER NOTE numbers.

DEFINE DEFAULT DRUMS (5)

DEFINE DEFAULT DRUMS is a utility program that affects only MIDI DRUM SONGSTEPPER.

DO NOT CHOOSE THIS PROGRAM UNTIL YOU BECOME AN EXPERIENCED PROGRAMMER/PERFORMER USING MIDI DRUM SONGSTEPPER.

Its purpose and use is explained below.

LOADING A PROGRAM FROM THE MASTER MENU

The GETTING STARTED section tells you how to get the MASTER MENU on the screen.

Select the program from the MASTER MENU you wish to use by number--type a single digit from 1 through 5--and then press [RETURN] as shown below.

Wait for the program to load, and answer the prompts displayed on screen.

LOADING SONGSTEPPER (1) or MIDI DRUM SONGSTEPPER (4)

SCREEN PROMPTS:	YOUR RESPONSE:
(MASTER MENU)	type [1] or [4] then [RETURN]
SONGSTEPPER IS LOADING NOW or MIDI DRUM SONGSTEPPER IS LOADING NOW	wait. adjust color?!
LOAD A SONG FROM DISK?	type [Y] or [N] then [RETURN]
SONG TITLE?	Type your title.

Use up to 13 LETTER and NUMBERS for the title of the song, but NO PUNCTUATION MARKS.

> REMOVE THE MASTER PROGRAM DISKETTE FROM THE DISK DRIVE.

If you answered [N] above, you are ready to produce a NEW song.

If you answered [Y] above:

> Put the DATA diskette in the disk drive that contains the song TITLE you provided in response to the "SONG TITLE?" prompt.
>
> Close the disk drive door.
>
> Type [RETURN]

The disk drive light will come ON. Do not disturb until it goes OUT. The system will load the song you requested from the diskette INTO MEMORY.

ANSWER "YES" OR "NO" TO THE LOAD PROMPT

When you type [N] in response to the prompt "LOAD SONG FROM DISK?", the system will clear memory and provide a clean slate for the "new" song named by you.

Type [Y] if you wish to:

(1) PLAY

(2) EDIT (change)

AN EXISTING SONG STORED ON DISKETTE.

When you type [Y] in response to the prompt "LOAD SONG FROM DISK?", and then type a song name, and then press [RETURN], the computer will look on the diskette CURRENTLY in the disk drive for a song with that name.

Type [N] if you wish to PRODUCE A NEW SONG.

THE DISKETTE IN THE DRIVE SHOULD NOT BE THE MASTER PROGRAM DISKETTE SUPPLIED BY MOOG. NEVER STORE YOUR SONGS ON THAT DISKETTE.

If you ask for a song with a TITLE that is NOT on the diskette in the drive, the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
FILE NOT FOUND DISK ERROR!!!	
HIT ANY KEY	(hit any key!)

This "error" message will occur when:

(1) You try to load a song whose name is NOT on the diskette in the drive.

(2) The disk drive is not turned on.

(3) The disk drive door is not closed.

(4) The diskette is damaged or inserted improperly.

If you get an ERROR message when trying to load a song into memory, the MENU for SONGSTEPPER or MIDI DRUM SONGSTEPPER will be displayed after you "HIT ANY KEY" in response to the ERROR MESSAGE PROMPT.

Correct the problem and try again, by doing the following:

Type [6] for LOAD.

Type [RETURN]

SCREEN PROMPTS:	YOUR RESPONSE:
DO YOU WANT TO KEEP -----	

IN MEMORY?	type [N] then [RETURN]
SONG TITLE?	type song title then [RETURN]

After the prompt sequence is satisfied, the screen will show the MENU for SONGSTEPPER or MIDI DRUM SONGSTEPPER.

YOU ARE NOW READY TO PROCEED TO THE SECTION OF THIS MANUAL TITLED: "SONGSTEPPER INTRODUCTION".

LOADING MIDI COMMAND (2)

SCREEN PROMPTS:	YOUR RESPONSE:
(MASTER MENU)	type [2] then [RETURN]
MIDI COMMAND IS LOADING NOW	(wait)
DO YOU WANT TO CLEAR MEMORY?	type [Y] or [N]

then [RETURN]

ALWAYS TYPE [Y] AFTER YOU FIRST LOAD MIDI COMMAND FROM THE MASTER MENU.

Type [Y] for "Yes" to CLEAR (destroy contents of) memory.

Type [N] for "No" ONLY when you want to preserve what you've been working on in memory after executing a RESET command [RUN STOP][RESTORE].

The RESET command [RUN STOP][RESTORE] is given only after the computer has a problem, such as an unexplained "hangup," or refusal to take commands. See the RESET command [RUN STOP][RESTORE] in the DICTIONARY OF COMMANDS for details.

THE MIDI COMMAND "HELP PAGE"

Once the colorful MIDI COMMAND grid (PAGE 0) comes on screen:

> Type [H] to go to the "Help Page."

This video page reviews the commands that let you program the MIDI COMMAND pages.

> Type the left-arrow key above the [CONTROL] key to display the MIDI COMMAND page again.

YOU ARE NOW READY TO PROCEED TO THE SECTION OF THIS MANUAL TITLED: "MIDI COMMAND INTRODUCTION."

LOADING SYNC COMMAND (3)

SCREEN PROMPTS:	YOUR RESPONSE:
(MASTER MENU)	type [3] then [RETURN]
SYNC COMMAND IS LOADING NOW	(wait)

When the SYNC COMMAND video page appears, YOU ARE NOW READY TO PROCEED TO THE SECTION OF THIS MANUAL TITLED: "SYNC COMMAND INTRODUCTION."

LOADING DEFINE DEFAULT DRUMS (5)

SCREEN PROMPTS:	YOUR RESPONSE:
(MASTER MENU)	type [5] then [RETURN]
DEFINE DRUMS IS LOADING NOW	(wait briefly)

The video page shows, at the top of the screen:

```
ENTER 0-127 FOR MIDI DRUMS
ENTER 0-127 FOR MIDI VOLUME
ENTER 0 OR 1 FOR TRIGGER DRUMS
ENTER S TO SAVE CURRENT DRUM SET UP
ENTER R TO RE-DO FROM START
ENTER [RETURN] TO KEEP OLD VALUE

DRUM 1
 TRACK D 1

MIDI DRUM # = 46
 NEW MIDI DRUM #?
```

THIS PROGRAM IS VALID FOR MIDI DRUM SONGSTEPPER ONLY.

DO NOT EXERCISE THIS PROGRAM UNLESS YOU ARE THOROUGHLY FAMILIAR WITH MIDI DRUM SONGSTEPPER, and have read the ENTER DRUM NUMBER command [1-8]; the AT DRUM TRACK? command [@]; the MIDI DRUM ASSIGN command [M]; and are, in general, a screaming expert on drumming using MIDI DRUM SONGSTEPPER. See these entries in the SONGSTEPPER & MIDI DRUM SONGSTEPPER DICTIONARY OF COMMANDS.

NOTICE!!! At this point, if you really do NOT wish to change the DEFINE DEFAULT DRUMS, you can simply type [S] to SAVE the current DEFAULTS.

DEFINING MIDI DRUM SONGSTEPPER DRUM DEFAULTS

The screen now shows everything you need to "define" the MIDI drums and DRUM TRIGGER OUTS jacks on MIDI DRUM SONGSTEPPER. Let's take it from the top, BEFORE you respond:

FIRST, CHANGES MADE ON THIS SCREEN ARE VALID ONLY FOR MIDI DRUM SONGSTEPPER, PROGAM (4) ON THE MASTER MENU.

SECOND, YOU DO NOT HAVE TO EXERCISE THE DEFINE DEFAULT DRUMS, IF YOU ARE SATISFIED WITH THE VERSION WE SUPPLY ON THE MASTER PROGRAM DISKETTE.

THIRD, IF YOU DO EXERCISE THIS PROGRAM, AND WANT TO SAVE YOUR NEW DEFINE DEFAULT DRUMS . . . DO NOT, DO NOT, DO NOT, ATTEMPT TO SAVE YOUR VERSION ON THE MASTER PROGRAM DISKETTE PROVIDED BY MOOG WITH SONG PRODUCER HARDWARE.

MAKE A COPY OF THIS SYSTEM DISKETTE USING ANY COPY PROGRAM YOU KNOW IS RELIABLE, OR BUY A BACKUP COPY FROM MOOG SERVICE, AND SAVE TO THAT COPY.

FOURTH, YOU DO NOT HAVE TO EXERCISE THIS DEFINE DRUM DEFAULTS PROGRAM TO CUSTOMIZE THE MIDI DRUM ASSIGNMENTS INDIVIDUALLY FOR EACH SONG YOU PRODUCE. THAT CAN BE DONE AT A "LOCAL" LEVEL USING THE MIDI DRUM ASSIGN COMMAND [M]. SEE DICTIONARY OF COMMANDS.

The MASTER PROGRAM diskette supplied by MOOG is "write protected" with a piece of plastic, and will NOT accept any attempt to save information to diskette. Make or buy a backup copy from MOOG SERVICE.

IN MIDI DRUM SONGSTEPPER, bus W is used to route 16 different MIDI drum numbers that are used to trigger the sounds in a MIDI drum machine.

Each MIDI drum sounds has a MIDI number and an associated MIDI volume (loudness) number.

A SINGLE digit number on the MIDI DRUM SONGSTEPPER DRUMS (1) segment grid "stands" for a TWO or THREE digit MIDI drum number and its associated MIDI volume number.

That is, when you place a number, say "1" on the DRUMS (1) grid, this may cause any MIDI number (from 0-127) and an associated volume number (from 0 which is silence, to 127 which is loudest) to be sent to the W-OUT MIDI output on the SONG PRODUCER when that DRUMS (1) segment is played.

In practice, drum machine manufacturers have adopted conventions that cause A PARTICULAR two digit MIDI number to play A PARTICULAR sound.

For instance, one manufacturer has adopted the following number/sound convention, which we also have adopted for our "factory" default for the DEFINE DEFAULT DRUMS program:

MIDI DRUM #	INSTRUMENT
35 and 36	BASS DRUM
37	RIM SHOT
38 and 40	SNARE DRUM
41 and 43	TOM 1
42 and 44	CLOSED HI HAT
45 and 47	TOM 2
46	OPEN HI HAT
49	CRASH CYMBAL
51	RIDE CYMBAL
54	TAMBOURINE
56	COWBELL
58	CABASA

So, you see, your entry of a single digit number on a DRUMS (1) segment grid causes a "DOUBLE" translation before a sound is actually played by the MIDI drum machine when using MIDI DRUM SONGSTEPPER.

FIRST, your SINGLE digit DRUMS (1) grid number is turned into a TWO (or potentially, THREE) digit MIDI number with an associated MIDI volume number.

Then that TWO digit MIDI number is translated into a particular drum sound--depending on the drum manufacturer's specification. The loudness of this sound will depend on the MIDI volume number.

To redefine the factory MIDI DRUM DEFAULT we have provided, you must know which MIDI number produces which sound on your drum machine.

THESE MIDI NUMBERS WORK ONLY THROUGH A MIDI BUS THAT USES MIDI CONNECTORS AND A LEGITIMATE MIDI CABLE.

The 1/4th inch DRUM TRIGGER OUTS jacks DO NOT handle MIDI information--ever.

EIGHT GRID NUMBERS, BUT 16 MIDI DRUM SOUNDS

On top of all this, you may have noticed that there are 16 possible MIDI drum sounds, and only 8 possible DIFFERENT numbers on a DRUMS (1) segment grid!

How do we distinguish 16 sounds using only 8 different DRUMS (1) numbers?!

By using TWO SETS of 8 numbers; one set in D1 or Drum track 1 of the SCORE (5), the other in D2 of the SCORE (5).

That is, the number "1" in a DRUMS (1) segment may play OPEN HI HAT CYMBAL if that segment is entered in Track D1 on the SCORE (5) and played.

THE SAME segment, if entered in Track D2 might play RIDE CYMBAL when a "1" is encountered when the SCORE (5) is played.

If that same segment is entered in BOTH Tracks D1 and D2 on the SCORE (5), the number "1" may cause BOTH or ONE of the instruments to play, DEPENDING ON THE ARCHITECTURE OF THE DRUM MACHINE. The drum machine may be INCAPABLE of playing both sounds simultaneously, for instance.

Definition of which DRUMS (1) GRID number stands for which MIDI DRUM NUMBER, and therefore which sound, IS subject to YOUR definition.

CUSTOMIZING DRUM SOUNDS FOR EACH SONG

This capability lets you customize MIDI DRUM SONGSTEPPER (only) to play the drum sound YOU want when you enter a given number on the DRUMS (1) segment grid.

THIS DEFINE DEFAULT DRUMS PROGRAM IS ONLY THE TEMPLATE FOR ASSIGNING MIDI DRUM NUMBERS THAT IS LOADED EACH TIME YOU LOAD MIDI DRUM SONGSTEPPER.

IT IS POSSIBLE TO INDIVIDUALLY CUSTOMIZE EACH SONG FOR MIDI DRUM ASSIGNMENTS USING THE MIDI DRUM ASSIGN COMMAND [M], WITHOUT RESORTING TO USING THIS DEFINE DEFAULT DRUMS (5) PROGRAM IN THE MASTER MENU.

THIS DEFINE DEFAULT DRUMS PROGRAM CREATES A TEMPLATE THAT IS JUST A HANDY BASE FROM WHICH TO WORK--A TIME SAVER THAT KEEPS YOU FROM HAVING TO ENTER FAMILIAR PATTERNS REPEATEDLY.

BEFORE YOU EXERCISE THIS PROGRAM, WE STRONGLY SUGGEST THAT YOU READ THIS ENTIRE MANUAL AND ACTUALLY CREATE SOME MUSIC. THE SYSTEM ALLOWS ONLY ONE DEFINE DEFAULT DRUMS ON A MASTER PROGRAM DISKETTE.

HERE IS THE "FACTORY" VERSION OF DEFINE DEFAULT DRUMS SUPPLIED BY MOOG ON THE MASTER PROGRAM DISKETTE:

FACTORY DEFINE DEFAULT DRUMS

DRUM GRID #	MIDI DRUM #	(SOUND)	MIDI VOL	TRIG
DRUM 1 TRACK D 1	46	OPEN HI HAT	75	0
DRUM 2 TRACK D 1	42	CLOSED HI HAT	85	0
DRUM 3				

TRACK D 1	49	CRASH CYMBAL	75	0
DRUM 4 TRACK D 1	41	TOM 1	90	0
DRUM 5 TRACK D 1	45	TOM 2	90	0
DRUM 6 TRACK D 1	40	SNARE DRUM	110	0
DRUM 7 TRACK D 1	37	RIM SHOT	85	0
DRUM 8 TRACK D 1	36	BASS DRUM	90	0
DRUM 1 TRACK D 2	51	RIDE CYMBAL	90	1
DRUM 2 TRACK D 2	54	TAMBOURINE	127	1
DRUM 3 TRACK D 2	39	HAND CLAPS	90	1
DRUM 4 TRACK D 2	43	ACCENT TOM 1	105	1
DRUM 5 TRACK D 2	58	CASABA	75	1
DRUM 6 TRACK D 2	38	ACCENT SNARE	127	1
DRUM 7 TRACK D 2	56	COWBELL	75	1
DRUM 8 TRACK D 2	35	ACCENT BASS	120	1

CHANGING DEFINE DEFAULT DRUMS

If you wish to CHANGE any of the drum defaults shown above, observe the following procedure:

> REMOVE THE MASTER PROGRAM DISKETTE FROM THE DISK DRIVE.

SCREEN PROMPTS:	YOUR RESPONSE:
DRUM 1 TRACK D 1	
MIDI #= 46 NEW MIDI DRUM # ?	[RETURN] to accept 46 or type [---] then [RETURN]

VOLUME= 75 NEW MIDI VOLUME?	[RETURN] to accept 75 or type [---] then [RETURN]
TRIGGER=0 NEW TRIGGER DRUM ?	[RETURN] to accept or type [1] or [0] then [RETURN]
DRUM 2 TRACK D 1	
MIDI DRUM # = 42 NEW MIDI DRUM # ?	[RETURN] to accept or type [---] then [RETURN]

And etc., through:

DRUM 8
TRACK D 2

> To REDO, type [R] then [RETURN] in response to ANY PROMPT above. This starts you at the FIRST PROMPT again: DRUM 1, TRACK D1. A REDO does NOT change any data; it lets you get around so YOU can change data.
>
> PLACE A !!! COPY !!! OF THE MASTER PROGRAM DISKETTE IN THE DISK DRIVE.
>
> To SAVE a DEFINE DEFAULT DRUMS, type [S] then [RETURN] in response to ANY PROMPT above. This saves the version of DEFINE DEFAULT DRUMS currently in memory to the diskette currently in the disk DRIVE.

NEVER PUT THE MASTER PROGRAM DISKETTE SUPPLIED BY MOOG IN THE DISK DRIVE WHEN YOU SAVE A SET OF DEFINE DEFAULT DRUMS. THE MASTER PROGRAM DISKETTE IS "WRITE" PROTECTED, AND WILL NOT ACCEPT A SAVE.

IF THE SCREEN SHOWS AN ERROR MESSAGE, CUT THE COMPUTER OFF, THEN ON. RELOAD THE MASTER MENU. TYPE [5] THEN [RETURN] AND TRY AGAIN.

THE PROMPTS FOR DEFINE DEFAULT DRUMS

The FIRST prompt asks you to either accept current MIDI drum number for DRUM 1, TRACK D1 by typing [RETURN]; or type [---], a new MIDI drum number, THEN type [RETURN].

The drum machine manufacturer has adopted a scheme that associates a MIDI number with a particular sound. Consult your drum manual for this number.

The SECOND prompt asks you to accept the current MIDI VOLUME number by typing [RETURN]; or type [---], a new MIDI volume number from 0 (zero) which is silence, to 127 which is loudest, THEN type [RETURN].

FINALLY, you must accept current TRIGGER programming by typing [RETURN], or type a [0] (zero) or a [1], THEN type [RETURN]. This prompt programs the associated DRUM TRIGGER OUTS jack on the SONG PRODUCER on/off.

If you program DRUM 3, TRACK D 2, with TRIGGER=1:

> The DRUM TRIGGER OUTS jack 3 WILL deliver a trigger EACH TIME the digit 3 is encountered on a DRUMS (1) segment placed in drum TRACK D 2 on the SCORE (5), when the song is played.

If you program DRUM 3, TRACK D 2 with TRIGGER=0:

> The DRUM TRIGGER OUTS jack 3 will NOT deliver a trigger when the digit three is encountered on a DRUMS (1) segment placed in drum TRACK D 2 of the SCORE (5).

DRUM 3, TRACK D 1 may be programmed independently from DRUM 3, TRACK D 2, as shown by the prompts on screen.

YOU MAY TYPE [R] THEN [RETURN] IN RESPONSE TO ANY PROMPT TO GO TO THE FIRST PROMPT FOR DRUM 1, TRACK D1. YOU MAY TYPE [S] THEN [RETURN] IN RESPONSE TO ANY PROMPT TO SAVE ALL OF DEFINE DEFAULT DRUMS TO DISKETTE.

See especially the AT DRUM TRACK? command [@] in the DICTIONARY OF COMMANDS. See also the MIDI DRUM ASSIGN command [M] in the DICTIONARY OF COMMANDS.

RELATIONSHIP BETWEEN DEFINE DEFAULT DRUMS (5) PROGRAM AND THE MIDI DRUM ASSIGN COMMAND [M].

Each time you load MIDI DRUM SONGSTEPPER, the DRUMS (1) grid/MIDI number assignments supplied by the DEFINE DEFAULT DRUMS program are adopted.

Altered DEFINE DEFAULT DRUMS information is always saved on a COPY of the MASTER PROGRAM DISKETTE.

DEFINE DEFAULT DRUMS is a GLOBAL program that is loaded into memory each time you load MIDI DRUM SONGSTEPPER.

You may ALTER the (DEFAULT) drum assignments for EACH SONG, using the MIDI DRUM ASSIGN command [M].

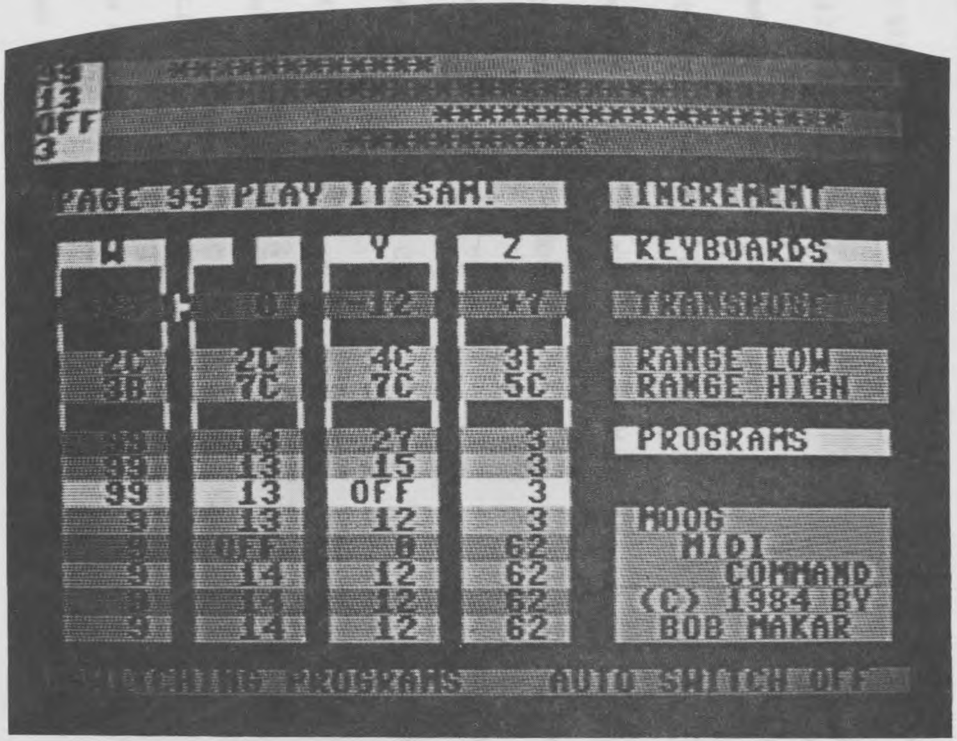
MIDI DRUM ASSIGN command [M] information is always saved on a DATA diskette along with the song to which it pertains.

MIDI DRUM ASSIGN is a LOCAL program, that is loaded from a DATA diskette into memory, as part of a particular MIDI DRUM SONGSTEPPER song.

THIS CONCLUDES THE MASTER MENU SECTION OF THIS MANUAL.

GO TO THE "INTRODUCTION" SECTION OF THE MANUAL APPROPRIATE FOR THE SOFTWARE PROGRAM OF YOUR CHOICE.

MIDI COMMAND INTRODUCTION



```
99   **************
13
OFF                     ********************
3                  *************

PAGE 99 PLAY IT SAM!              INCREMENT

  W                Y        Z     KEYBOARDS

[illegible]   0   +12       +7    TRANSPOSE

  2C      2C      4C        3F    RANGE LOW
  3B      7C      7C        5C    RANGE HIGH

  99      13      27         3    PROGRAMS
  99      13      15         3
  99      13     OFF         3
   9      13      12         3    MOOG
   9     OFF       0        62      MIDI
   9      14      12        62         COMMAND
   9      14      12        62    (C) 1984 BY
   9      14      12        62     BOB MAKAR

SWITCHING PROGRAMS        AUTO SWITCH OFF
```

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MIDI COMMAND

INTRODUCTION

THIS PART OF THE MANUAL IS A TUTORIAL THAT SHOWS YOU, STEP-BY-STEP HOW TO PROGRAM THE MIDI COMMAND PAGE.

COMMENTS ABOUT HOW TO USE MIDI COMMAND IN YOUR PERFORMANCE ARE INCLUDED.

PLEASE READ THIS SECTION AND PERFORM ALL THE TUTORIALS THAT ARE INCLUDED BEFORE PROGRESSING TO THE "HELP PAGE GLOSSARY" THAT SUMMARIZES THE COMMAND STRUCTURE OF MIDI COMMAND.

GENERAL DESCRIPTION

MIDI COMMAND is the SONG PRODUCER software that senses, processes, distributes, and transmits polyphonic MIDI data from a master keyboard to slave keyboards, in "real time," as you play.

MIDI COMMAND IS A PERFORMER'S TOOL.

MIDI COMMAND processes or passes ALL MIDI data presented to the MIDI IN jack of the SONG PRODUCER. It can be used to process MIDI data you play live, or MIDI keyboard data produced by a sequencer or other device.

MIDI COMMAND lets you control, individually for EACH of FOUR MIDI buses we have named W, X, Y, and Z: bus off/on, MIDI PROGRAM number, keyboard high/low note definition, and transposition. Each bus may be programmed completely independently and without regard to "channel" assignment problems.

Each bus output W-OUT, X-OUT, Y-OUT, and Z-OUT on the SONG PRODUCER has "hard-wired" integrity in MIDI OMNI mode. At least four MIDI instruments may be slaved to and played simultaneously from a single master keyboard, without regard to which MIDI channel each instrument transmits or receives.

MIDI COMMAND lets you store vast numbers of MASTER keyboard high/low note configurations that give you SPLIT/LAYERED multi-timbral slave keyboard capabilities. Each keyboard configuration has its own PAGE.

A set of ONE HUNDRED such pages can be held in memory simultaneously, and used in performance. Random access to a particular PAGE among the 100 in memory is also possible. You can also STORE as many of these sets of 100 pages on diskette as you like, using names of your choice for easy recall.

MIDI COMMAND lets you step through, using a footswitch if you like, ONE HUNDRED master/slave split/layer multi-timbral keyboard configurations, each with a different PAGE number. Each page can also be NAMED with a name of your choice.

Each page contains up to 8 QUADSETS, or rows of PROGRAMS that may be selected. A QUADSET IS A ROW OF FOUR PRESETS, OR MIDI PROGRAM NUMBERS, ON THE MIDI COMMAND PAGE. IT COMPRISES FOUR MIDI PROGRAM NUMBERS OR BUS "OFF" ENTRIES, ONE FOR EACH OF THE FOUR BUSES W,X,Y, AND Z. So, you can program up to 800 different combinations of MIDI PROGRAM NUMBERS for up to 4 different instruments connected one-each to a bus. And have them available at the touch of a footswitch.

Up to 20 PAGES can be grouped in any order, creating a CHAIN. A CHAIN is named using a single letter of the English alphabet. There are therefore 26 CHAINS, or 26 groups of 20 PAGES drawn from the 100 PAGES that can be called up for your use. CHAINS are automatically linked in alphabetical order (A advances to B advances to C, etc). CHAINS may be linked in a non-alphabetical order using a JUMP.

To summarize, 100 PAGES can be held in memory. These hundred PAGES can be further organized into 26 CHAINS of 20 pages each, with no restrictions on which pages are used, or how CHAINS are linked.

WITH MIDI COMMAND, step on a switch and play: (1) several slave keyboards from one master keyboard; (2) different keyboards depending on what pitch range of the master keyboard you are playing; (3) different sounds on each keyboard, independently determined and stored--by the thousands; (4) different transpositions/octaves on the slave keyboards than you are playing on the master; (5) or silence: an instrument or group of instruments, either globally for an entire page, or momentarily on a quadset; (6) and more, that YOU will discover. And do all of your playing from the "FOUR KEYBOARDS" that MIDI COMMAND transforms your one master keyboard into.

MIDI COMMAND does NOT make your instrument(s) either transmit or receive any MIDI information (e.g. velocity sensitivity) for which they are not designed. It does NOT transform an instrument that is not touch sensitive into one that is, etc.

Also, MIDI COMMAND does not change the maximum NUMBER of voices a master or slave keyboard can transmit or receive, in absolute terms. That is, a six voice master instrument will transmit only six MIDI notes at one time. A single six voice slave cannot play more that six MIDI notes at one time. However, clever programming of keyboard splits and release times of slave keyboard programs may make it seem otherwise! In fact, it is fair to say that you and MIDI COMMAND will astound and outrage your audience due to variety and texture of the sounds you can produce! MIDI COMMAND gets your MIDI instruments together!

LOADING MIDI COMMAND

MIDI COMMAND IS ONE OF THE ALTERNATIVES LISTED ON THE MASTER MENU, WHOSE VIDEO PAGE DISPLAYS "PROGRAM DISK ONE." TO LOAD MIDI COMMAND, place the MASTER MENU on the screen and:

Type [2].

Type the [RETURN] key.

Wait until the light on the disk drive goes OFF, and the screen will "prompt:"

DO YOU WANT TO CLEAR MEMORY?

Type [Y] for Yes.

IF YOU MAKE A TYPING ERROR, USE THE [INST DEL] KEY TO DELETE YOUR ENTRY. THEN TYPE THE CORRECT ENTRY.

Type [RETURN].

//////////

DELETING AN ENTRY: A GENERAL RULE FOR MIDI COMMAND

In MIDI COMMAND, the [INST DEL] key may be used to delete a typing error or undesired entry made in response to A PROMPT THAT ENDS WITH A QUESTION MARK.

Do NOT use the [INST DEL] key to delete partial OR complete entries that have been made in the CELLS of a MIDI COMMAND PAGE. Simply OVERWRITE the incorrect entry by entering the correct entry. (See below).

//////////

FOR YOUR FIRST ENCOUNTER WITH MIDI COMMAND AFTER IT IS FRESHLY LOADED, TYPE [Y], THEN [RETURN].

Type [Y] for Yes when the prompt "DO YOU WANT TO CLEAR MEMORY?" appears after MIDI COMMAND has just been loaded into memory due to your selection of (2) MIDI COMMAND on the MASTER MENU. THIS COVERS THE GREAT MAJORITY OF THE CASES.

You should clear memory EACH time after you load (2) MIDI COMMAND from the MASTER MENU.

Type [N], then [RETURN], only if the prompt "DO YOU WANT TO CLEAR MEMORY?" appears due to your request for a system RESET.

A system reset is requested by typing [RUN STOP][RESTORE]. To RESET, you first must type the [RUN STOP] key and hold it down. Then type the [RESTORE] key while holding the [RUN STOP] key down. Try several times if necessary.

A RESET is called for if the computer does not respond to appropriate commands from the keyboard. For example, when the cursor won't move when it should. Should you encounter a computer hangup, malfunction, glitch, etc. while actually programming MIDI COMMAND pages, type [RUN STOP][RESTORE] to reset the computer.

After a system RESET, the prompt above, "DO YOU WANT TO CLEAR MEMORY?" will appear. IF YOU HAVE VALUABLE INFORMATION PROGRAMMED ON MIDI COMMAND PAGES YOU DO NOT WANT TO LOSE, YOU SHOULD TYPE:

[N], then [RETURN]

IN RESPONSE TO THE PROMPT. This action does NOT clear memory, and your PAGES will remain in memory.

ACCESS TO 100 MIDI COMMAND PAGES

After you have loaded MIDI COMMAND and cleared memory by typing [Y], then [RETURN], the screen will display the MIDI COMMAND page number 0 (zero). The word PAGE appears at the upper left of the screen, followed by the numeral 0.

THERE ARE 100 MIDI COMMAND PAGES:

> Type the [f3] function key once to go backward from the zero page BACK to the last page, number 99.
>
> Type the [f1] function key once to ADVANCE from the last page 99, to the zero page.

THERE ARE 100 MIDI COMMAND PAGES, NUMBERED FROM 0 (ZERO) THROUGH 99. THE [f1] AND [f3] FUNCTION KEYS PROVIDE SEQUENTIAL OR SERIAL ADVANCE/BACK THROUGH THE NUMBERED PAGES. Note the word "INCREMENT" at the right of the PAGES line.

> When MIDI COMMAND is in the INCREMENT mode:
>
> The [f1] function key ADVANCES to the next HIGHER numbered PAGE.
>
> The [f3] function key goes BACK to the next LOWER numbered PAGE.

RANDOM ACCESS TO ANY MIDI COMMAND PAGE

It is not always convenient to ADVANCE/BACK to pages using the [f1] and [f3] function keys to get to the page desired. Immediate and "random" access to any page is provided, regardless of the PAGE MODE of MIDI COMMAND. With any MIDI COMMAND page on the screen:

> Type [P].
>
> The screen prompts:
>
> PAGE?
>
> Type the page desired, for example, [5] then [7]. If you make an error use the [INST DEL] key to delete the last character entered.

Type the [RETURN] key.

Notice that PAGE 57 is now on the screen.

Type [P] again.

Type [0], which is zero.

Type [RETURN].

THE ZERO PAGE IS NOW ON SCREEN.

The page number you type and enter in response to the prompt above, "PAGE?" will be displayed. Therefore it is easy to display ANY of the 100 pages using the [P] command.

Remember [P] for Page.

CONNECTIONS: MASTER AND SLAVE KEYBOARDS

A keyboard is a MASTER or SLAVE in MIDI COMMAND by virtue of its connections. (Just like life!). That is, your connection of an instrument to SONG PRODUCER MIDI jacks determines its status as a master or slave.

The MASTER keyboard is the one whose MIDI OUT is connected to the MIDI IN of the SONG PRODUCER. There can be only ONE MASTER keyboard; there is only ONE MIDI IN on the SONG PRODUCER.

The MASTER keyboard can play and control SLAVE keyboards connected to the W-OUT, X-OUT, Y-OUT, and Z-OUT jacks on the SONG PRODUCER. IN MIDI COMMAND, ALL SLAVE KEYBOARDS CONNECTED TO THESE OUTPUTS MUST BE PLACED IN THE "OMNI" MIDI MODE.

THE COLUMNS ON THE MIDI COMMAND PAGE MARKED W, X, Y, AND Z REPRESENT THE MIDI BUSES THAT ARE ROUTED TO THE W-OUT, X-OUT, Y-OUT, AND Z-OUT JACKS. Entries in these columns tell WHICH slave instruments will play, what MIDI PROGRAM numbers to play, whether to transpose notes played on the master keyboard, and determine all the split/layer keyboard capabilites that the master keyboard offers IN CONJUNCTION with its slaves.

MIDI COMMAND (computer) control of four MIDI buses independently--with associated graphics, offers more powerful and flexible control of instruments than a simple MIDI connection between instruments.

THE MASTER KEYBOARD

Connect the master keyboard MIDI OUT to the MIDI IN jack on the SONG PRODUCER. This connection makes the instrument so connected the ONLY master keyboard.

When you play the master keyboard you can program some or all of the slave instruments to play. MIDI COMMAND passes ALL MIDI keyboard information from the master keyboard, including velocity sensitivity, etc. So it may make sense to use a touch sensitive instrument as the master if you have one. Of course, if your slave instruments do NOT receive velocity information, other factors such as keyboard length may be important to you. It depends on your preference for which keyboard you would like to actually touch in order to play all of your slave keyboards.

THE SLAVE KEYBOARDS

> Connect each MIDI output W-OUT, X-OUT, Y-OUT, and Z-OUT on the SONG PRODUCER to the MIDI INPUT of a slave instrument.

Slave instruments so connected can be thought of as "Instruments W,X,Y, and Z." Any instrument(s) connected on separate MIDI OUTS on the SONG PRODUCER this way can be played, transposed, split/layered, and provided different MIDI PROGRAM numbers from 0 (zero) through 127.

NOTE: SOME MIDI INSTRUMENTS CONTAIN AS FEW AS 32 POSSIBLE PRESETS OR PROGRAMS. IT MAKES NO SENSE TO SPECIFY A PROGRAM NUMBER IN A "BUS COLUMN" ON A MIDI COMMAND PAGE THAT EXCEEDS THE HIGHEST AVAILABLE PROGRAM NUMBER OF THE INSTRUMENT CONNECTED TO THAT BUS.

THE MASTER/SLAVE CONNECTION

Some instruments can function both as a master and a slave, providing significant benefits. See the section titled CREATING A MASTER/SLAVE COMBINATION KEYBOARD at the end of this MIDI COMMAND INTRODUCTION after you are familiar with MIDI COMMAND.

TURNING MIDI BUS W,X,Y,Z ON/OFF GLOBALLY

The MIDI COMMAND PAGE is divided into four columns labeled W, X, Y, and Z. These columns represent the MIDI buses we have named W, X, Y, and Z. It is possible to connect the MIDI IN of each slave instrument to one of these MIDI buses using the W-OUT, X-OUT, Y-OUT, and Z-OUT jacks on the SONG PRODUCER.

Each key W, X, Y, or Z on the computer keyboard is used to "toggle" or individually turn a MIDI bus W, X, Y, or Z ON then OFF. This command is GLOBAL. It turns a bus (column) ON/OFF for ALL PAGES.

The GLOBAL ON/OFF status of each MIDI bus is shown on the line titled "KEYBOARDS." Watch this line, and:

> Type [W].
>
> Look at the screen on the KEYBOARDS line. The letter W at the top of the W bus column is replaced by a dark box. This indicates that MIDI

bus W is OFF. In this condition, NO instrument connected to the W-OUT jack on the SONG PRODUCER can be played from the master keyboard, regardless of which PAGE is on the screen. The W MIDI bus is OFF.

Type [W] again.

The letter W reappears, indicating that the MIDI bus W is ON. In this condition IT IS POSSIBLE that the instrument connected to the W-OUT MIDI jack on the SONG PRODUCER can be played from the master keyboard. This depends on what you enter in column W on the MIDI COMMAND page.

Repeat this procedure for each key W, X, Y and Z as many times as you like.

Leave each bus ON, with its letter displayed, before going on with this tutorial.

TURNING A MIDI BUS OFF ON THE MIDI COMMAND PAGE DOES NOT DISABLE ANY INSTRUMENT CONNECTED TO A SONG PRODUCER W-OUT, X-OUT, Y-OUT, OR Z-OUT JACK. You can choose to play the keyboard of any slave instrument directly. Turning a MIDI bus off merely breaks the connection between the master keyboard and any slave keyboard(s) connected to the MIDI bus that is turned off.

CURSOR CONTROL

A MIDI COMMAND PAGE is a grid of CELLS that comprise a multishade or multicolor video page. Your job is to get around this page and type numbers (primarily), and enter them into specific cells using the [RETURN] key. These entries let you control your keyboard stack using a single keyboard.

Since you have to move around on the page, you'll need CURSOR CONTROL. The CURSOR is a little symbol on screen that indicates where you are on the display.

You'll become aware of the "cursor" symbol as you move it. Locate the two [CRSR] keys below the [RETURN] key.

The key on the left is the "up/down" [CRSR] key.

The other key is the "left/right" [CRSR] key.

WATCH THE SCREEN AS YOU:

Type the up/down [CRSR] key to move the cursor DOWN. Type that key until the cursor moves to the bottom of the column.

TYPE THE [SHIFT] KEY AND HOLD IT DOWN. NOW type the up/down [CRSR] key to move the cursor UP.

Type the left/right [CRSR] key to move the cursor to the RIGHT.

TYPE THE THE [SHIFT] KEY AND HOLD IT DOWN. NOW type the left/right [CRSR] key to move the cursor to the LEFT.

PROGRAMMING QUADSETS: THE CELLS LABELED "PROGRAMS"

MIDI PROGRAM numbers are the same as the "preset" or "program" numbers that your instrument displays to represent different sounds.

MIDI PROGRAM numbers are entered on the MIDI COMMAND page in the PROGRAMS cells on the bottom portion of the page. The allowable range for MIDI PROGRAM numbers on a MIDI COMMAND PAGE is from 0-127.

Move the cursor to the PROGRAMS line on the video page.

Type [6] then [7]. The MIDI PROGRAM number 67 appears in INVERSE display: light characters on a dark background.

IF YOU MAKE A MISTAKE ENTERING A DIGIT OF A PROGRAM NUMBER, DO NOT use the [INST DEL] key to delete it. Simply type [RETURN] and then type the MIDI PROGRAM number you want.

TYPE [RETURN] TO ENTER THE (CORRECT) NUMBER YOU HAVE TYPED, 67 in this case. Note that display returns to the NORMAL display when a number is entered: dark characters on a light background.

Now, let's try another number.

Type [9].

Type [RETURN].

Note that the [RETURN] key will enter a ONE, TWO, OR THREE digit MIDI number in the allowable range from 0-127. Typing "leading" zeroes in front of one or two digit numbers is not necessary.

Note also, that the new entry at a cell that has an existing entry simply "overwrites" or takes the place of the old entry.

After a complete entry is made in a cell the [INST DEL] key will NOT delete that entry. To "correct" a complete, or a partial entry, simply type [RETURN] and then type the correct MIDI number you intended. When the number you want is displayed in the cell, type [RETURN] to enter it.

NOW MOVE THE CURSOR TO THE OTHER CELLS IN THAT ROW, AND FILL THE ENTIRE ROW titled PROGRAMS with MIDI program numbers of your choice from 0-127.

Type [RETURN] to enter each number. You are literally selecting, on the instrument connected to each bus W,X,Y, and Z, the PROGRAM NUMBER OF THE SOUND you want that instrument to make.

A SINGLE ROW IN THE PROGRAMS AREA IS KNOWN AS A "QUADSET," EVEN IF IT DOES NOT CONTAIN FOUR MIDI PROGRAM NUMBERS.

TURNING A BUS OFF IN A QUADSET

One alternative to MIDI PROGRAM number entries is the "OFF" entry, which turns a bus OFF within a quadset:

Move the cursor to an empty quadset cell.

Type the letter [O].

Note that the word "OFF" appears in that cell.

TYPE THE LETTER [O] TO ENTER "OFF" IN A QUADSET, OR PROGRAMS CELL.

The appearance of OFF in a quadset is LOCAL, restricted to that quadset. That bus W, X, Y, or Z where OFF appears is NOT turned off for the entire PAGE. However, when the white quadset bar is ON a row that displays the word OFF, the bus where OFF appears is turned off. This local OFF is used to silence an instrument in your stack momentarily.

THE BLANK CELL: NO CHANGE OF PROGRAM NUMBER FOR THIS BUS

You can leave a quadset cell BLANK by making no entry, or replace an entry with a BLANK by typing the [SPACE BAR].

See also the [SPACE BAR] = ENTER A NO CHANGE SIGN in the MIDI COMMAND HELP PAGE GLOSSARY part of this manual.

A blank cell does NOT mean zero. It does NOT mean "no program number." It does NOT mean OFF. A BLANK cell is interpreted as NO CHANGE OF THE PROGRAM NUMBER THAT WAS LAST ON THAT BUS.

WHEN THE WHITE QUADSET BAR IS LOCATED ON A QUADSET WITH A BLANK, THAT BLANK IS NOT INTERPRETED AS AN "OFF. THE PROGRAM NUMBER LAST ON THAT BUS WILL REMAIN ON THE INSTRUMENT CONNECTED TO THAT BUS WHEN A BLANK IS ENCOUNTERED IN THAT BUS COLUMN ON THE PAGE.

OFF entries do not affect the interpretation of blank cells. BLANKS under an OFF do NOT represent OFF entries.

FILLING IN THE BLANKS ON A PAGE

THIS BLANK "NO CHANGE" PROTOCOL MAKES IT EASY FOR YOU TO PROGRAM THE SAME PROGRAM NUMBER DOWN THROUGH SEVERAL CELLS OF A COLUMN WITHOUT HAVING TO ENTER THE NUMBER IN EACH CELL.

BLANKS BELOW PROGRAM NUMBERS ON A PAGE MAY BE "FILLED" TO DISPLAY THE IMPLIED REPETITION OF PROGRAM NUMBERS IN THOSE

BLANK CELLS, USING A SIMPLE COMMAND. THIS COMMAND FILLS IN THE BLANKS BELOW PROGRAM NUMBER ENTRIES:

> Type [f1] until a blank MIDI COMMAND page is on screen.
>
> Move the cursor to the TOP row of the PROGRAMS area.
>
> Move the cursor to each column W, X, and Y in turn, and:
>
> Type and enter, using [RETURN], a MIDI PROGRAM number for each bus W, X, and Y.
>
> Move the cursor to the Z column.
>
> Type the letter [O] then [RETURN] to enter OFF for bus Z.
>
> Move the cursor down several rows.
>
> Type and enter a different MIDI PROGRAM number for buses X, and Z. Don't duplicate any number on the top row.

Take a good look at the page. Try to visualize what the page would look like if blanks below PROGRAM numbers were filled.

> Type [↑], THE UP-ARROW KEY located above the [RETURN] key.
>
> Wait, then look again.

Blanks that were below NUMBERS have been filled with the number entered ABOVE them. Blanks below OFF entries have NOT been filled.

The remaining blanks still represent NO CHANGE, or the program number last on the bus.

You need NOT provide entries in a column W,X,Y, or Z if no instrument is connected to the related MIDI W,X,Y, OR Z-OUT. You may turn any unused bus OFF by typing its letter W,X,Y, or Z to remind you it need not be programmed.

MARCHING THROUGH QUADSETS: ADVANCE AND BACK

There is a white "quadset bar" that indicates which PROGRAMS ROW, or quadset of MIDI program numbers you have currently chosen to send to the four MIDI OUTS on the SONG PRODUCER:

> Type the [f7] function key to ADVANCE the white "quadset bar" through the quadsets.
>
> Type the [f5] function key to move the white "quadset bar" BACK through the quadsets.

SCROLLING OFF THE PAGE

It is possible to "scroll off" of the page on the screen in either direction to adjacent pages, using the function keys. The 800 rows of PROGRAMS on the 100 PAGES are in a continuous loop.

WHEN USING [f7] TO ADVANCE through PROGRAMS: the quadset bar ADVANCES from the BOTTOM row of PROGRAMS on a page, to the TOP row of PROGRAMS on the page to which you ADVANCE.

WHEN USING [f5] TO BACK through PROGRAMS: the quadset bar BACKS from the TOP row of PROGRAMS on a page to the BOTTOM row of PROGRAMS on the page to which you go BACK.

WHEN USING [f1] or [f3] TO ADVANCE/BACK through PAGES: the quadset bar will always start at the TOP of any PAGE to which you ADVANCE or BACK.

BLANKS AND QUADSET DIRECTION

AFTER THE BLANK SPACES BELOW PROGRAM NUMBERS ARE REPLACED WITH ENTRIES USING THE UP-ARROW [↑] KEY, the page will NOT NECESSARILY be completely filled. BLANKS below OFF entries will remain BLANK.

A BLANK CELL in a quadset may alow that quadset to send one of TWO ENTIRELY DIFFERENT PROGRAM numbers, depending on whether you ADVANCE or go BACK to this quadset. Remember, a BLANK cell means "no change in program number." And the program numbers in the cell ABOVE and the cell BELOW a blank cell can be DIFFERENT. "NO CHANGE" is literal, and works whether you move the quadset bar from ABOVE or BELOW the quadset with the BLANK.

When there are NO BLANKS on the screen, the MIDI COMMAND page will send WHAT YOU SEE when you place the white quadset bar on a quadset. SO, for most cases, it is wise to fill in ALL the blanks on a page to clarify the PROGRAM number you intend.

A string of blanks in a column MAY be useful, however. For instance, you might wish to enter PROGRAM NUMBERS DIRECTLY using the front panel controls of one of your instruments and NOT change the current PROGRAM NUMBER as you ADVANCE/BACK through quadsets. As you ADVANCE/BACK through quadsets, a series of BLANKS in that instrument's bus column ASSURES that NO CHANGE of PROGRAM NUMBER will occur due to MIDI COMMAND. The PROGRAM NUMBERS for that instrument will remain unchanged by MIDI COMMAND--you may enter them directly using the instrument's controls.

Blanks in a single column let you "improvise" PROGRAM numbers on one instrument while moving through quadsets that strictly control the PROGRAM numbers on the other instruments. Of course blanks may occur in ANY column and AS MANY columns as you choose. The balance between IMPROVISED and PREPROGRAMMED choice of PROGRAM numbers is up to you.

TO REPLACE AN ENTRY WITH A BLANK, MOVE THE CURSOR TO THE CELL AND TYPE THE [SPACE BAR].

THE BUS BOX BY THE GRAPHIC DISPLAY

```
(W) *********************************
(X) *********************************
(Y) *********************************
(Z) *********************************
```

THE ENTRIES AT THE CURRENT LOCATION OF THE WHITE QUADSET BAR ARE SENT TO THE FOUR MIDI BUSES. THE NUMBERS, OFF ENTRIES, AND BLANKS FOR THE CURRENT QUADSET ALSO APPEAR AT THE UPPER LEFT OF THE DISPLAY IN A "BUS BOX" ADJACENT TO THE FOUR ROWS OF ASTERISKS.

THE PROGRAMS entries will change in the BUS BOX as you ADVANCE/BACK the white quadset bar through quadsets. The BUS BOX reflects WHAT YOU SEE on the PROGRAMS line at the current quadset bar location.

The buses are displayed FROM TOP TO BOTTOM of the BUS BOX, starting with W at the top, and Z at the BOTTOM.

The BUS BOX shows which sound each slave keyboard is making. (The asterisks ***** show the LENGTH of the keyboard for each bus and its LOCATION on the master keyboard. See SPLIT/LAYERED KEYBOARDS: RANGE LOW AND RANGE HIGH below).

IF YOU CHOOSE TO LEAVE A BLANK in a quadset it will be shown as a BLANK in the BUS BOX. IT IS WISE TO "FILL IN ALL BLANKS" ON THE PAGE. There can be no question about data that appears in the BUS BOX IF A PAGE IS FILLED.

THE SPLIT/LAYERED KEYBOARDS:
RANGE LOW AND RANGE HIGH

The master keyboard can be split/layered into four independent "software" keyboards of VARIABLE LENGTH. Each of these four keyboards controls ONE of the buses W, X, Y, or Z. The LENGTH, or pitch span of each keyboard is determined independently by specifying its LOW and HIGH notes on the master keyboard.

The respective RANGE LOW and RANGE HIGH notes for each bus, or "keyboard" can be specified to create (1) several separate spans on the master keyboard that do not overlap--SPLIT keyboards, or (2) keyboards whose playing ranges coincide--for LAYERED sound, or (3) keyboards whose playing ranges coincide partially--OVERLAPPED keyboards, or (4) a combination of these kinds of keyboard configurations.

ENTRY OF RANGE HIGH AND RANGE LOW USING A MIDI KEYBOARD:

> Make certain the MIDI OUT of your master keyboard is connected to the MIDI IN of the SONG PRODUCER.
>
> Move the cursor to the RANGE LOW row for the W bus

(in column W).

Play the note on the master keyboard that you wish to become the LOWEST note on the master keyboard this will cause the slave instrument on bus W to play.

Type [RETURN] to enter that note.

Notice the change of number/letter on the screen at the cursor.

Notice also any change in the top line of the ***** graphic display.

Move the cursor to the RANGE HIGH row on column W.

Play the note that defines the HIGHEST note on the master keyboard that you would like the instrument on bus W to sound.

The RANGE HIGH note should be the same or higher than the RANGE LOW note.

Type [RETURN] to enter that note.

Notice the change on the screen at the cursor.

Anytime you wish to change a RANGE note, simply position the cursor and repeat the entry procedure. The new entry will overwrite the old entry.

The [INST DEL] key DOES NOT DELETE an existing RANGE LOW or RANGE HIGH entry.

If you did the tutorial above, when you play the master keyboard, the instrument connected to W-OUT on the SONG PRODUCER will play only between (and including) the RANGE LOW and RANGE HIGH notes entered for bus W for the page.

You have defined the bus W keyboard LENGTH and its LOCATION on the master keyboard for this PAGE. Another page might have entirely DIFFERENT RANGE LOW and RANGE HIGH notes for bus W.

NOTICE that RANGE LOW and RANGE HIGH data on the screen change when you play a MIDI keyboard, then type [RETURN] to enter new RANGE notes, as does the graphic display--THE TOP ROW OF ASTERISKS--for each bus programmed.

One way to learn where the RANGE LOW and RANGE HIGH notes are on your MIDI keyboard, is to watch the RANGE LOW or RANGE HIGH line as you enter a note. Play a note on the the MIDI keyboard and type [RETURN] to enter it.

IF YOU ARE USING A TYPICAL 5-OCTAVE MIDI SYNTHESIZER KEYBOARD AS A MASTER INSTRUMENT, YOU WILL DISCOVER THAT ITS PITCH SPAN IS FROM NOTE 2C THROUGH NOTE 7C ON THE MIDI COMMAND PAGE. If you have a longer MIDI keyboard, consider using it.

If you make RANGE LOW and RANGE HIGH the SAME note, you create a keyboard that has ONE note. This can be useful to trigger sound effects. You can put such a one note keyboard at the bottom or top of the master keyboard, so the sound effect KEY is easy to find.

Should you program RANGE HIGH lower that RANGE LOW, that slave keyboard will have NO LENGTH--no keys, which is equivalent to turning off that bus.

Repeat the RANGE LOW and RANGE HIGH procedure for each bus on the video page.

Look at the graphic display to get an idea of how the different "bus keyboards" defined on the master keyboard split, overlap, layer, etc.

TRY VARIOUS LOW AND HIGH NOTES FOR EACH BUS.

WATCH THE GRAPHIC DISPLAY. DEPENDING ON THE RANGE LOW AND RANGE HIGH NOTES ENTERED FOR EACH BUS, YOU MIGHT GET A GRAPHIC DISPLAY WHOSE ASTERISKS LOOK LIKE:

```
          ******************************
**********
****************************************
                  **********
```

With a little experimentation you will discover that you can SPLIT or OVERLAP and LAYER the instruments connected to the MIDI OUTS of the SONG PRODUCER.

COMPUTER KEYBOARD ENTRY OF RANGE HIGH AND RANGE LOW NOTES

These RANGE LOW and RANGE HIGH notes may also be entered using the computer keyboard exclusively. You might want to do this if you are away from your musical instruments but have your portable computer along with you. NOTE: MIDI COMMAND, AND OTHER SONG PRODUCER SOFTWARE DOES NOT WORK UNLESS THE SONG PRODUCER HARDWARE IS CONNECTED TO THE COMPUTER.

Move the cursor to the bus (column) of interest on the RANGE LOW or RANGE HIGH line.

Type the OCTAVE NUMBER from [0]-[8].

If you type the wrong number, DO NOT delete using the [INST DEL] key. Simply type [RETURN]. Then start the entry procedure again, and type the correct octave number.

Each octave number from [1] thrugh [7] represents an octave, or GROUP of notes from C UP THROUGH B on the keyboard. [4] is middle C, so all notes from Middle C to the B above Middle C are in the "4" octave.

The [3] octave of notes, C up through B, starts on the C an octave BELOW Middle C. The [5] octave of notes, C up through B, starts on the C an octave ABOVE middle C, and so forth.

The [0] and [8] categories are exceptions. The [8] octave can represent only a single note, the C that is FOUR octaves above Middle C. The [0] octave can represent the notes A, B-flat, and B immediately below the C that is THREE octaves below Middle C.

> Type the LETTER NAME of the note.

The LETTER NAME alternatives are, alphabetically, from [A-G]. That is, the notes of the musical scale: C, D, E, F, G, A, or B.

If the note is a BLACK note, it must be represented as a "sharp," a black note immediately above a white note. MIDI COMMAND doesn't care what "key" you are playing in. A split is a split. Since C-Sharp and D-Flat are the same physical KEY on the keyboard, one representation is adequate to represent both notations.

> Type [SHIFT][#] if it is necessary to enter a "sharp" or black key.

It is not necessary to type [RETURN] to enter a sharped note. To enter a sharped note, type [SHIFT] first and hold it down; then type the [#] key.

> Type [RETURN] to enter the note.

Some examples of RANGE HIGH and RANGE LOW notes as they appear on the video page, whether entered by MIDI or computer keyboard:

4C - Middle C
4A - A above Middle C
3A - A above the C one octave below Middle C
1C - C three octaves below Middle C
7A# - A# above the C three octaves above Middle C
2D# - D# above the C two octaves below Middle C

COMPUTER ENTRY OF RANGE LOW OR RANGE HIGH "BUS/OFF"

It is possible to turn a bus OFF for the entire PAGE by entering OFF in either the RANGE LOW or RANGE HIGH cell for that bus.

> Move the cursor to either RANGE HIGH or RANGE LOW in the column whose bus you wish to turn OFF.

> Type the letter [O] for Off.

The word "OFF" immediately appears at BOTH the RANGE HIGH or RANGE LOW cells for that bus. That bus is turned OFF for THIS PAGE only.

To cancel this OFF, make valid RANGE LOW and RANGE HIGH entries normally.

This BUS/PAGE OFF is NOT the same as the GLOBAL OFF executed by typing [W], [X], [Y], or [Z]. A GLOBAL OFF turns the bus

OFF for ALL PAGES.

The OFF that appears in a quadset turns the bus off ONLY when the white quadset bar is located on that quadset.

THE GRAPHIC DISPLAY AND RANGE NOTES

The graphic display is OPTIMIZED to display the common 5-octave keyboard span of a MIDI synthesizer. In terms of MIDI COMMAND, this 5-octave span is from notes 2C through 7C. If you program a RANGE HIGH that is a few notes outside the nominal 7C limit, this will be shown with additional asterisks **. Any RANGE HIGH note higher than 7F will be indicated graphically on the screen at the right end of the asterisks **** line with a > greater than symbol. Any RANGE LOW note that is lower than 1G# is indicated on the screen at the left of the asterisks **** line with a < less than symbol.

THE GRAPHIC DISPLAY **** IS A CONVENIENCE THAT REMINDS YOU HOW THE MASTER KEYBOARD SPLITS, LAYERS, AND OVERLAPS THE "SOFTWARE BUS-KEYBOARDS" THAT CONTROL THE SLAVE INSTRUMENTS. GRAPHIC DISPLAY LIMITS DO NOT LIMIT THE SIZE OF THE KEYBOARD YOU MAY USE FOR THE MASTER KEYBOARD.

A MASTER KEYBOARD OF ANY SIZE MAY BE USED. ITS NOTES FROM 0A TO 8C CAN DRIVE SLAVE INSTRUMENTS. That is, the note A that is three octaves and a minor third below Middle C, to the C four octaves above Middle C. MIDI COMMAND SUPPORTS A MASTER KEYBOARD SPAN OF MORE THAN SEVEN OCTAVES.

A NOTE ON MIDI VERSUS COMPUTER ENTRY

Computer keyboard entry is a convenience, but like all conveniences, it has a potential drawback. It is possible to use the computer keyboard to enter RANGE LOW or RANGE HIGH notes that fall outside the master keyboard's actual keyboard span.

If you do this, no damage will occur, but you will have defined a bus keyboard, some of whose notes cannot be played on the master MIDI instrument you are using.

Entry of RANGE LOW and RANGE HIGH notes on the PAGE is foolproof when using the master MIDI keyboard to actually PLAY the notes desired (as described above). You cannot play a RANGE LOW or RANGE HIGH note on the master MIDI keyboard that isn't ON the master MIDI keyboard! Using a MIDI keyboard for programming RANGE HIGH and RANGE LOW is reasonable, since this master keyboard must be connected for typical use of MIDI COMMAND in performance.

Heh, heh. I know some of you crafty sequencer freaks will connect MIDI sequencers and composition programs to the MIDI IN of your SONG PRODUCER and use MIDI COMMAND, fooling this innocent software into thinking you are a macho keyboard player! So far, we haven't found a keyboard player who can OUTPLAY MIDI COMMAND. Maybe your sequencer can run SO fast that MIDI COMMAND may lose a note or two; finding out would be fun.

In fact there are a lot of possibilites for live/programmed performance that may not seem apparent at first. If you have TWO SONG PRODUCERS, you could connect one to the other. One could be in SONGSTEPPER, the other in MIDI COMMAND, and you could steer all or part of your SONGSTEPPER compositions through ridiculous and sublime split/layer/transpose MIDI COMMAND QUADSETS on PAGE after PAGE live and in color.

If your MIDI keyboard can hack it, you can let SONGSTEPPER play a bunch through your keyboard's MIDI IN and you can also noodle on the keyboard. Any attempt at fooling the audience into thinking you are playing everything live will be disavowed by The Secretariat!

TRANSPOSITION OF SLAVE INSTRUMENTS

The final row programmable by cursor/entry is the TRANSPOSE row. Suppose you have defined RANGE notes so you play bus W only on the bottom two octaves of the master keyboard. But suppose you would like the MIDI PROGRAM that slave instrument W plays, to SOUND ONE OCTAVE HIGHER than the notes you play on the master keyboard. So:

> Move the cursor to the TRANSPOSE row for bus W.
>
> Play, on the master keyboard the note ONE OCTAVE HIGHER than Middle C.
>
> Look at the screen. (That transposition UP one OCTAVE is displayed as +12 halfsteps.)
>
> Type [RETURN] to enter the DIRECTION and INTERVAL of transposition. That is, ONE OCTAVE HIGHER.

Any bus W, X, Y, and Z can be transposed over a wide range--UP four octaves, or DOWN three octaves. The interval of transposition is always PROGRAMMED RELATIVE to Middle C.

That is, to transpose a bus DOWN a minor third, play and enter the A immediately below Middle C. To transpose a bus UP a Perfect Fifth, play and enter the G above Middle C. To transpose a bus up a TWELFTH, play and enter the G one octave and a Perfect Fifth above Middle C.

You can play in ANY KEY on the master keyboard. Each note you play will be TRANSPOSED BY INTERVAL and played on the slave. MIDI COMMAND never restricts the key in which you can play on the master keyboard.

WHEN YOU ENTER A TRANSPOSE NUMBER, ITS EFFECT IS LOCAL. AN ENTRY OF A TRANSPOSE NUMBER DOES NOT AFFECT ALL PAGES.

ALL CELLS IN THE TRANSPOSE LINE ON ALL MIDI COMMAND PAGES DEFAULT TO 0, OR "NO TRANSPOSITION." IF YOU DO NOTHING, NO TRANSPOSITION WILL TAKE PLACE.

The most common use of TRANSPOSE is "voicing" the various layered voices to appear in octaves that blend well. But more exotic transpositions can be effected. You could cause the buses to spell a chord, so when you play a monophonic line on the master keyboard, the slaves play PARALLEL CHORDS.

TO "CANCEL" A TRANSPOSITION, OR CAUSE NO TRANSPOSITION, PLAY MIDDLE C, THEN TYPE [RETURN].

COMPUTER ENTRY OF TRANSPOSE NUMBER

TRANSPOSE data can also be entered strictly with the computer keyboard:

> Move the cursor to the column of interest on the TRANSPOSE row.
>
> Type a [+] for a transposition UP, or type [-] to indicate a transposition DOWN.
>
> Then type the NUMBER OF HALFSTEPS on the keyboard the transpose interval spans. An octave spans 12 halfsteps. So, to transpose an instrument connected to a MIDI bus-OUT up ONE OCTAVE would require the following entries:
>
> [+] then [1] then [2] then [RETURN].

The range of numbers for a transposition DOWN is [0-36]; UP is [0-48].

NOT ALL MIDI KEYBOARDS TRANSMIT OR RECEIVE ALL MIDI NOTE NUMBERS. SOMETIMES A TRANSPOSE CAN MAKE YOU RUN OUT OF ROOM, CAUSING THE SLAVE INSTRUMENT TO CEASE TO PLAY NOTES ABOVE OR BELOW A CERTAIN NOTE ON THE MASTER KEYBOARD. EXPERIMENT WITH YOUR INSTRUMENTS TO LEARN LIMITATIONS AND POSSIBILITIES.

TO "CANCEL" A TRANSPOSITION, OR CAUSE NO TRANSPOSITION, TYPE [0] THEN [RETURN].

EFFECT OF TRANSPOSE NUMBER ON THE GRAPHIC DISPLAY

NONE! The graphic display **** shows you where the RANGE LOW and RANGE HIGH notes for each "software" keyboard are located on the MASTER keyboard. The graphic display does NOT indicate the OCTAVE a slave may be PLAYING in. The graphic display tells you where you can put your hands on the master to play which slave(s).

SAVING/LOADING MIDI COMMAND PAGES

After you have programmed various MIDI COMMAND pages to your satisfaction, those pages may be SAVED on a diskette. NEVER SAVE MIDI COMMAND PAGES ON THE MASTER PROGRAM DISKETTE SUPPLIED WITH THE SONG PRODUCER.

Use a "data" diskette that has been properly FORMATTED to accept your data.

FORMATTING A DATA DISKETTE

To format a data diskette so it can store your MIDI COMMAND pages, do the following BEFORE YOU GET SOME NICE PAGES PROGRAMMED:

With NO diskette in the disk drive, turn the disk drive on, then turn the POWER to the computer ON. (If you have a portable with built-in drive, just turn the computer ON). You must start "cold," with the power first OFF, then turn it ON.

Put a new "blank" diskette in the disk drive. Close and latch drive door.

Type the following:

```
OPEN15,8,15,"N0:----------------,--"
```

Use the [INST DEL] key to delete the last character if you make typing errors.

Notice that there are NO SPACES typed. The word OPEN uses the letter O; the character next to the N is a ZERO.

Also, do not type any DASHES. The first group of dashes ---------------- REPRESENTS a field for UP TO 16 alphanumeric characters for this diskette's name. Type 16 OR FEWER letters and numbers, but NO PUNCTUATION MARKS for this name. The last group of dashes -- REPRESENTS another system alphanumeric name. Use letters, numbers or both, but NO PUNCTUATION marks. This last name -- SHOULD be unique for each diskette you use.

MAKE SURE you have typed all characters above correctly. THERE SHOULD BE NO SPACES AND NO DASHES, JUST LETTERS, NUMBERS AND PUNCTUATION MARKS, AND THE NAMES YOU PROVIDED EXACTLY AS PRESCRIBED. Correct errors using the [INST DEL] key to delete the last character.

Type [RETURN].

The computer will properly format the diskette. It takes about 90 seconds. No not disturb until the disk light goes OUT!

ALWAYS TAKE THE DISKETTE OUT OF THE DRIVE AND TURN THE COMPUTER OFF AFTER FORMATTING A DISKETTE.

THEN WRITE BOTH NAMES ENTERED ABOVE ON A STICKER AND STICK IT ON THE DISKETTE FOR IDENTIFICATION. DON'T PUT THE STICKER ON, AND THEN WRITE. OTHERWISE, YOU MAY DAMAGE THE DISKETTE.

Verify that formatting took place.

TO VERIFY THAT FORMATTING TOOK PLACE:

Take the "formatted" DATA diskette out of the disk drive.

Turn the computer OFF, then ON.

Put the "formatted" DATA diskette back into the disk drive.

Type:

```
LOAD"$",8
```

Then type [RETURN]

Then type [L] then [I] then [S] then [T]

Then type [RETURN]

You should see a message and the name of your diskette. THIS VERIFIES THAT FORMATTING HAS BEEN DONE. THIS IS NOW A "DATA" DISKETTE CAPABLE OF STORING YOUR SONGS. MAKE SEVERAL AND KEEP THEM AROUND!

SAVING YOUR MIDI COMMAND PAGES ON A DATA DISKETTE

With the computer ON, a MIDI COMMAND page on the screen, and a properly FORMATTED DATA diskette in the disk drive:

Type [D].

The screen asks:

```
LOAD OR SAVE?
```

Type [S] for Save.

Type the [RETURN] key.

The screen asks:

```
SAVE NAME?
```

Type in an alphanumeric name of 16 or FEWER characters. Use letters and numbers, but NO PUNCTUATION MARKS.

Type [RETURN].

This saves all 100 pages currently in memory under the name you supplied. If you supply a name [----------------] that is CURRENTLY already in use to store data on the diskette, the data stored under that name will be overwritten and destroyed if you SAVE using that same name. USE UNIQUE NAMES FOR EACH SET OF PAGES YOU WISH TO STORE ON A DISKETTE.

Individual pages may not be saved, only sets of 100 pages. This SAVE does NOT destroy the contents of memory.

See also [D] = SAVE OR LOAD FROM DISK command in the HELP PAGE GLOSSARY section of this manual.

LOADING MIDI COMMAND PAGES INTO MEMORY

IT IS IMPORTANT TO UNDERSTAND THAT LOADING THE MIDI COMMAND PROGRAM INTO MEMORY BY SELECTING (2) MIDI COMMAND FROM THE MAIN MENU DOES NOT LOAD A SET OF 100 MIDI COMMAND PAGES YOU HAVE SAVED ON A SEPARATE "DATA" DISKETTE.

To load the MIDI COMMAND PROGRAM, the MASTER PROGRAM diskette supplied with the SONG PRODUCER must be in the disk drive.

AFTER MIDI COMMAND IS LOADED, you may then wish to load a set of MIDI COMMAND PAGES previously saved on a DATA diskette. REMOVE the MASTER PROGRAM diskette from the drive and insert the DATA diskette that contains the set of MIDI COMMAND PAGES you saved previously.

The LOAD from DISK operation RETRIEVES a set of 100 MIDI COMMAND pages from the DATA diskette currently in the disk drive, and "loads" that set into memory.

With the DATA diskette that contains the set of PAGES you wish to load into memory in the disk drive, and a MIDI COMMAND PAGE on the screen:

Type [D] for Disk.

The screen prompts:

LOAD OR SAVE?

Type [L] for Load.

Type [RETURN].

The screen prompts:

SAVE IT FIRST?

Type [N] for No.

This response means you do NOT want to save the PAGES currently in memory. (See [D] = SAVE OR LOAD FROM DISK command in the HELP PAGE GLOSSARY for explanation of [Y] alternative).

Type [RETURN].

The screen prompts:

LOAD NAME?

Type the NAME of the set of pages you want to load into memory. Use the [INST DEL] key to correct typing errors.

Type [RETURN] and wait until the first page appears.

THIS OPERATION, LIKE ANY LOAD COMMAND, WILL OVERWRITE THE CURRENT CONTENTS OF MEMORY, DESTROYING THE SET OF MIDI

COMMAND PAGES CURRENTLY IN MEMORY. A LOAD operation does NOT destroy any data stored on diskette however.

POSSIBLE ERRORS WHEN LOADING

If you supply a LOAD NAME that is NOT on the diskette, you will be returned to the PAGE that was on screen when you first typed [D] to start the LOAD operation. This also creates a DISK ERROR, and the disk light will blink. You MUST correct this, and may do so by once again typing [D] and initiating either a SAVE or a LOAD operation. See also the DISK ERROR: A BLINKING LIGHT in the [D] = SAVE OR LOAD FROM DISK command in the HELP PAGE GLOSSARY part of this manual.

If you supply a LOAD NAME that IS a valid name on the diskette in the drive, but that name supplies the WRONG TYPE of data, you may get MIDI COMMAND PAGES filled with complete garbage numbers. For example if you supply the name of a SONGSTEPPER song by accident, this will happen. For this reason, we heartily recommend that you DO NOT mix data for different SONG PRODUCER software, such as MIDI COMMAND and SONGSTEPPER, on the same DATA diskette. To recover, type [D] and LOAD a valid set of MIDI COMMAND pages.

USING FOOTSWITCHES IN PERFORMANCE

The FUNCTION keys [f5] and [f7] are used to SWITCH from PROGRAMS row to PROGRAMS row. The FUNCTION keys [f1] and [f3] are used to SWITCH from PAGE to PAGE.

When switching, there is control over direction: ADVANCE and BACK. To help remember, note that the ADVANCE keys are the OUTSIDE keys in the group of four function keys. The BACK keys are the INSIDE keys.

Reread the sections of the manual presented earlier, titled ACCESS TO 100 MIDI COMMAND PAGES, MARCHING THROUGH QUADSETS: ADVANCE AND BACK, and SCROLLING OFF THE PAGE for a review if necessary.

YOU MAY CHOOSE to connect footswitches to the the FOOTSWITCH 1 and 2 jacks on the SONG PRODUCER to provide ADVANCE and BACK direction control. FOOTSWITCH jack number 1 is the ADVANCE jack. FOOTSWITCH jack number 2 is the BACK jack. There is therefore an ADVANCE footswitch and a BACK footswitch if you use two footswitches.

When two footswitches are connected to the FOOTSWITCH jacks on the SONG PRODUCER, you must then choose whether you are switching PAGES or PROGRAMS. (There are FOUR FUNCTION keys, but only TWO footswitches).

This choice is made by typing [S] when a MIDI COMMAND page is on the screen. Each time you type [S] it "toggles," or alternates choice between SWITCHING PROGRAMS or SWITCHING PAGES with the two footswitches. Let's try it:

Connect footswitches to the SONG PRODUCER jacks labelled FOOTSWITCH 1 and 2.

Place any MIDI COMMAND page on the screen.

Type [S] several times slowly.

Look at the bottom line on the screen. The line alternately displays "SWITCHING PROGRAMS" or "SWITCHING PAGES."

Type [S] to display SWITCHING PROGRAMS.

Step on one footswitch, then the other. Note that the footswitches ADVANCE and BACK through PROGRAMS, or quadsets.

Type [S] to display SWITCHING PAGES.

Step on one footswitch, then the other. Note that footswitches ADVANCE and BACK through PAGES.

Play with all four FUNCTION keys. All of them still function normally!

The footswitches serve the SAME purpose as the FUNCTION keys. You type [S] to choose WHICH two FUNCTION keys you wish to press WITH YOUR FOOT.

The "scrolling" of the white quadset bar to another PAGE follows the same rules as if the appropriate function keys were used. See SCROLLING OFF THE PAGE above.

YOU CAN ALWAYS ADVANCE/BACK BOTH BY PAGES AND BY PROGRAMS USING THE FUNCTION KEYS. YOU MUST CHOOSE WHETHER YOU WISH TO ADVANCE/BACK BY PROGRAMS OR BY PAGES USING FOOTSWITCHES CONNECTED TO THE FOOTSWITCH 1 AND 2 JACKS.

CREATING A COMBINATION MASTER/SLAVE KEYBOARD

SOME master keyboards can also be a slave.

You may choose to connect one of the SONG PRODUCER MIDI outputs (W-OUT, etc) to the MIDI INPUT of the master instrument. Remember, the master instrument is the one whose MIDI OUT is connected to the SONG PRODUCER MIDI IN.

What's the advantage to this connection of BOTH the MIDI IN and MIDI OUT of the same (master) instrument to the SONG PRODUCER to create a master/slave instrument? Well, if you connect a SONG PRODUCER MIDI OUT to the master instrument's MIDI IN, your master instrument's MIDI program number, etc. will also be under control of MIDI COMMAND quadsets, as well as the "other" slaves.

WHEN THE MASTER/SLAVE dual connections are made, the master instrument then becomes one of the slaves controlled by a bus column on the MIDI COMMAND page. Then if you ADVANCE/BACK through quadsets (press [f7] or [F5], or footswitches) during performance, the MIDI program numbers, transposition, etc. of all "slave" instruments, INCLUDING THE MASTER INSTRUMENT can be changed. It is the MASTER, and also one of the SLAVES!

NOTE: TO QUALIFY FOR THIS SPECIAL MASTER/SLAVE TWO-CABLE MIDI CONNECTION, THE MASTER INSTRUMENT MUST BE ABLE TO RECEIVE AND EXECUTE THE MIDI "LOCAL CONTROL OFF" CODE. THIS CODE DISABLES THE INTERNAL CONNECTION BETWEEN KEYBOARD AND SOUND GENERATORS. YOU MUST USE THIS CODE IF YOU MAKE THE DUAL MASTER/SLAVE CONNECTION DESCRIBED!

TO DISCONNECT THE MASTER KEYBOARD FROM ITS OWN TONE GENERATORS SEND THE MIDI "LOCAL CONTROL OFF" CODE TO THAT INSTRUMENT. THIS CODE IS TYPICALLY SENT BY PRESSING A COMBINATION OF BUTTONS ON THE INSTRUMENT'S OWN FRONT PANEL. LOOK IN THE OWNER'S MANUAL FOR THAT KEYBOARD FOR DETAILS REGARDING THE "LOCAL CONTROL OFF" CODE.

IF THIS INFORMATION IS NOT READILY AVAILABLE IN THE OWNER'S MANUAL FOR YOUR MASTER KEYBOARD, SEE the [L] = LOCAL CONTROL ON OR OFF command in the HELP PAGE GLOSSARY part of THIS manual. The LOCAL CONTROL OFF code may be sent by MIDI COMMAND using the [L] = LOCAL CONTROL ON OR OFF command. This description in the HELP PAGE GLOSSARY shows you how to test whether your instrument has the software capability to receive the "LOCAL CONTROL OFF" MIDI code.

Some MIDI instruments, e.g. the MEMORYMOOG PLUS do NOT have this software capability and will create problems when BOTH MIDI OUT and MIDI IN are connected to the SONG PRODUCER. YOU CAN USE A MEMORYMOOG PLUS AS THE MASTER INSTRUMENT, OR A SLAVE INSTRUMENT, BUT AVOID USING IT AS A MASTER/SLAVE INSTRUMENT IN MIDI COMMAND.

//

MIDI COMMAND AND THE MIDI STANDARD

For various reasons, not all MIDI instruments behave identically. Elements of the MIDI STANDARD have been interpreted differently by different manufacturers. MIDI COMMAND is designed to be compatible with as many MIDI instruments as possible.

You should be aware that some MIDI instruments do not respond to the so-called "ALL NOTES OFF" MIDI information and will sometimes "hang up" and continue to play a note after a key is apparently released.

If you connect such an instrument as a slave, this "droning" of notes may become apparent when switching by PAGES in MIDI COMMAND. In particular, consider the case where you are HOLDING keys down on the master keyboard WHILE switching to another PAGE. The page you just switched to may have a RANGE LOW or RANGE HIGH note specified that EXCLUDES notes you are currently holding down. When you release these notes, some instruments may CONTINUE to sound these notes, since they do not "see" you release these notes individually, and DO NOT respond to the ALL NOTES OFF bits in the data stream.

What do you DO? (1) Try another instrument; (2) don't play notes as you switch to another PAGE; (3) reprogram RANGE LOW or RANGE HIGH on one page or the other; (4) punt.

One of the virtues of the MIDI standard is its ability to communicate PROGRAM numbers over a cable. This part of the MIDI standard is central to the ability of MIDI COMMAND to create "quadsets," or groups of PROGRAM numbers. Unfortunately, several MIDI instruments "wake up" when you turn them ON specifically NOT READY to receive MIDI PROGRAM numbers. This will become apparent if your instrument REFUSES to change PROGRAM numbers as you step through PROGRAMS (quadsets) in MIDI COMMAND.

If your slave instrument does not respond to MIDI PROGRAM number changes from MIDI COMMAND (or SONGSTEPPER) look in the manual for THAT instrument to see how this function may be turned ON.

In general, you will become aware that SONG PRODUCER is part of a SYSTEM that helps you make music. The strengths and liabilities of your INSTRUMENTS, and the COMPUTER interact with SONG PRODUCER to that end.

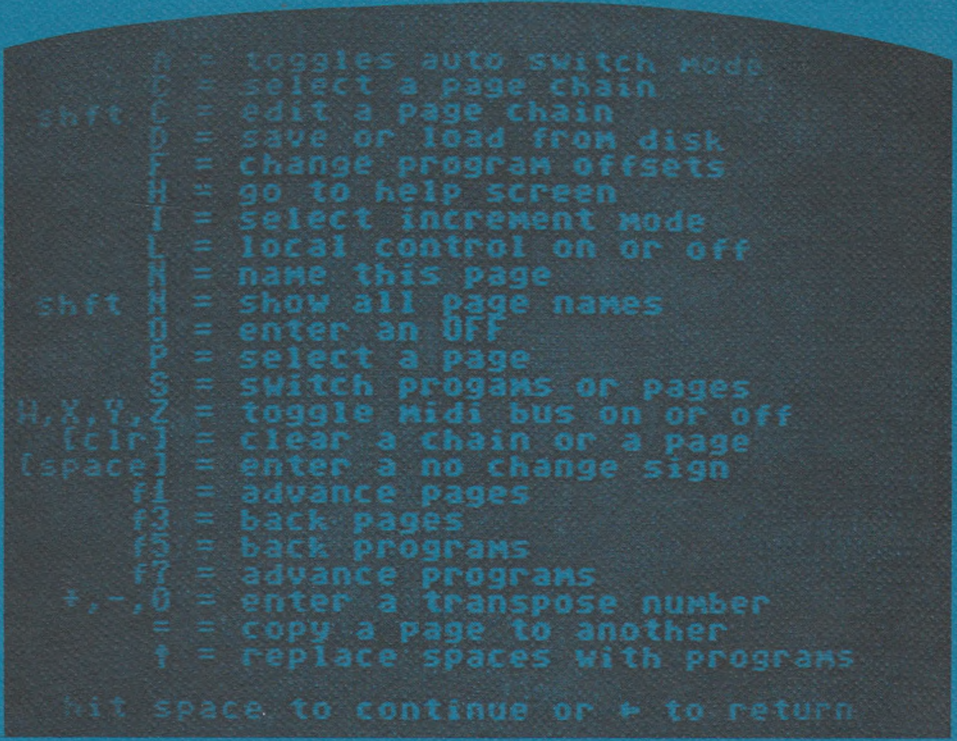
Computers (and acoustic guitars) don't like exessive HEAT. They don't like LINE SURGES and other severe voltage irregularities. Sometimes a computer "hangs up" momentarily for "NO APPARENT REASON!" A cheap surge suppressor would probably be a worthwhile component to add between the electrical outlet and your computer. The odds are nearly certain that you will experience some frustration along the way.

But the rewards are worth it. MIDI COMMAND really will take the burden of managing a stack of instruments onto its broad. . .uh . . bits and bytes! And, ALL SONG PRODUCER SOFTWARE CAN BE LOADED USING A DISKETTE. A NEW VERSION OF SONG PRODUCER SOFTWARE COULD BE LOADED BY YOU AS EASILY AS YOU LOAD THIS VERSION.

SONG PRODUCER IS A SYSTEM WITH A FUTURE.

FOR A DISCUSSION OF ALL THE COMMANDS AVAILABLE IN MIDI COMMAND, SEE THE "HELP PAGE GLOSSARY" SECTION OF THIS MANUAL.

MIDI COMMAND: HELP PAGE GLOSSARY



```
        A = toggles auto switch mode
        C = select a page chain
   shft C = edit a page chain
        D = save or load from disk
        F = change program offsets
        H = go to help screen
        I = select increment mode
        L = local control on or off
        N = name this page
   shft N = show all page names
        O = enter an OFF
        P = select a page
        S = switch progams or pages
  W,X,Y,Z = toggle midi bus on or off
    [clr] = clear a chain or a page
  [space] = enter a no change sign
       f1 = advance pages
       f3 = back pages
       f5 = back programs
       f7 = advance programs
    +,-,0 = enter a transpose number
        = = copy a page to another
        ↑ = replace spaces with programs

   hit space to continue or ← to return
```

INDEX

HELP PAGE GLOSSARY

(COMMANDS APPEAR BELOW AS THEY DO ON THE VIDEO HELP PAGE)

A = toggles auto switch mode HP- 3.0

C = select a page chain HP- 3.0

shft C = edit a page chain HP- 4.0

D = save or load from disk HP- 6.0

F = change program offsets HP- 9.0

H = go to help screen HP-10.0

I = select increment mode HP-10.0

L = local control on or off HP-10.0

N = name this page HP-13.0

shft N = show all page names HP-14.0

O = enter an OFF HP-14.0

P = select a page HP-14.0

S = switch programs or pages HP-15.0

W, X, Y, Z = toggle midi bus on or off HP-15.0

[clr] = clear a chain or a page HP-16.0

[space] = enter a no change sign HP-16.0

f1 = advance pages HP-17.0

f3 = back pages HP-17.0

f5 = back programs HP-17.0

f7 = advance programs HP-17.0

+, -, 0 = enter a transpose number HP-17.0

= = copy a page to another HP-18.0

↑ = replace spaces with programs HP-19.0

(ALL COMMANDS ABOVE MAY BE GIVEN ONLY WHEN A MIDI COMMAND PAGE IS ON THE SCREEN)

MIDI COMMAND

HELP PAGE GLOSSARY

THIS HELP PAGE GLOSSARY DEFINES ALL THE COMMANDS AVAILABLE IN MIDI COMMAND.

WE RECOMMEND THAT YOU READ THE TUTORIAL ON THE BASICS OF MIDI COMMAND BEFORE READING THIS GLOSSARY. SEE THE "MIDI COMMAND INTRODUCTION" SECTION OF THIS MANUAL.

THIS GLOSSARY IS AN EXPANSION OF THE "HELP PAGE," AN ABBREVIATED REMINDER OF COMMAND KEYSTROKES FOR MIDI COMMAND SOFTWARE.

THE "HELP PAGE" IS AVAILABLE ON VIDEO PAGE(S) WHEN MIDI COMMAND IS IN USE. WITH A MIDI COMMAND PAGE ON THE SCREEN, TYPE [H] TO DISPLAY THE VIDEO HELP PAGE(S).

THE COMMANDS FOR MIDI COMMAND ARE PRESENTED IN THIS GLOSSARY IN THE ORDER THEY APPEAR ON THE HELP PAGE, IN ROUGHLY ALPHABETICAL ORDER BY KEY(S) THAT MUST BE TYPED TO GIVE SPECIFIC COMMANDS.

HOW TO READ ENTRIES IN THIS GLOSSARY

REFERENCES TO THE COMPUTER KEYBOARD

A reference in this manual to a key on the computer keyboard appears as a number, symbol, or in CAPITAL letters surrounded by brackets [ ]. For example, [4] refers to the specific key numbered "4" and 4 (without brackets) refers to the numeral four. Sometimes a single computer key has several letters on it. [SHIFT] is an example of such a key.

CAPITALIZATION AND USE OF THE [SHIFT] KEY

Notice that letters on the computer keyboard are CAPITALS. You do NOT have to use the [SHIFT] key to create a capital letter, unlike a typewriter. The majority of the commands for MIDI COMMAND require that you type a single key, which is shown as a capital letter:

[C]

The example above represents the [C] = SELECT A PAGE CHAIN command. You give this command by simply typing the [C] key on the computer keyboard. So, ignore the distinction normally made on a typewriter keyboard between upper and lower case letters. That is, do NOT try to create a capital letter by using the [SHIFT] key. The alphabet keys on the computer keyboard ARE capital letters--all of the time.

TWO-KEYS-TOGETHER COMMANDS: THE [SHIFT] KEY

Occasionally in MIDI COMMAND, a command REQUIRES use of the [SHIFT] key in conjunction with another key. This is shown like this:

[SHIFT][C]

The example above is the [SHIFT][C] = EDIT A PAGE CHAIN command. To give this command, you first type the [SHIFT] key. While holding [SHIFT] down, you then type the [C] key, so BOTH keys are down together. If you accidentally type the [C] key first, you will give the "C" command, not the "SHIFT C" command. These are different commands! The so-called "shift" commands are sensitive to order--hold the [SHIFT] key down first, then type the other key. You should use the [SHIFT] key only when explicitly told to do so!

COMMANDS THAT OFFER CHOICE

Occasionally you give a command that provides a choice, or requires you to select from a range of numbers or letters to complete the command. For example:

[+] THEN [0-48] OR [-] THEN [0-36] = ENTER A TRANSPOSE NUMBER

This indicates that you should type and release the [+] OR the [-] key. THEN type a number from 0 through 36 (or 0 through 48) as indicated.

DISTINCTION BETWEEN ZERO AND THE LETTER "O"

In this manual the numeral zero has a slash through it: 100, 101, 102, etc. The letter O has no slash.

PROMPTS: MESSAGES FROM SONG PRODUCER

SONG PRODUCER carries on a conversation with you. It can give you messages on the screen that "prompt" action on your part. Sometimes your response requires typing a name, for instance, that may be a variable number of keystrokes. We will show any variable element such as this with dashes [-----]. The rules for entry will be provided in the discussion within the glossary entry. The format within this manual for representing screen prompts is:

SCREEN PROMPTS:	YOUR RESPONSE:
LOAD NAME?	type [-----] then [RETURN]

//

THE HELP PAGE GLOSSARY ENTRIES

ALL COMMANDS MAY BE GIVEN ONLY WHEN A MIDI COMMAND PAGE IS ON THE SCREEN UNLESS OTHERWISE NOTED.

[A] = TOGGLES AUTO SWITCH MODE

Type [A] repeatedly to "toggle," or alternate between AUTO SWITCH OFF and AUTO SWITCH ON, as displayed on the bottom line of the page on the screen.

When AUTO SWITCH OFF is displayed, MIDI COMMAND will NOT respond to any entry or change of MIDI PROGRAM NUMBER you cause by direct manipulation of controls or footswitches connected to the MASTER instrument. That is, you can enter, reenter, ADVANCE, BACK through, or change MIDI PROGRAM NUMBERS on the MASTER keyboard's panel, and MIDI COMMAND will ignore your actions.

When AUTO SWITCH ON is displayed, MIDI COMMAND will respond to ANY entry or change of MIDI PROGRAM NUMBER caused by direct manipulation of the MASTER instrument. For instance, some instruments, e.g. the MEMORYMOOG PLUS, provide buttons that can ADVANCE/BACK through MIDI PROGRAM NUMBERS. Any entry, reentry, ADVANCE OR BACK to A MIDI PROGRAM NUMBER caused by pressing buttons on, or footswitches connected to the MASTER instrument, will cause MIDI COMMAND to recognize this action, and cause an ADVANCE within MIDI COMMAND. This ADVANCE is the same as though you stepped on a footswitch connected to the FOOTSWITCH 1 jack on the SONG PRODUCER.

This ADVANCE may be used to cause an ADVANCE through PROGRAMS (quadsets), or PAGES, by your choice. See ESPECIALLY the [S] = SWITCH PROGRAMS OR SWITCH PAGES command, page HP-15.0.

///

[C] = SELECT A PAGE CHAIN

Type [C] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
NEW CHAIN?	type [A-Z] then [RETURN]

This command lets you select a CHAIN, which is a grouping of PAGES. A CHAIN is a group of up to 20 video pages you have put into some order to aid your performances. The CHAIN lets YOU skip around from page to page in an order you have selected.

A chain is named--WHEN YOU PROGRAM IT--with a single letter of the English alphabet. There can be 26 different chains associated with each set of 100 MIDI COMMAND pages.

PROCEDURE

Type [C].

Then type the single letter, WITHOUT USING THE

[SHIFT] KEY, of the NAME of the chain you wish to SELECT.

Type [RETURN].

This command puts you in the CHAIN mode.

The word "CHAIN" appears at the right side of the status line immediately below the graphic **** display when you select a chain. This line shows whether you are in the INCREMENT or CHAIN mode. See also the [I] = SELECT INCREMENT MODE command, page HP-10.0.

The word "CHAIN" is followed by the LETTER that names the chain SELECTED, and a "row number" from 1 through 20.

The "row number 1" appears when you FIRST select a chain, to indicate that you are on the FIRST ROW of the chain selected. This numeral simply "counts" the (20) ROWS in the chain as you ADVANCE/BACK through them to tell you which row you are on within the 20 page chain.

This "row number" never exceeds 20, since that is the maximum number of rows, and therefore PAGES, a single chain may contain. The "row number" indicates which row you are on within a CHAIN.

At the left side of this status line the word "PAGE" appears, followed by a number. When you first call a chain, this PAGE NUMBER will be the actual MIDI COMMAND PAGE NUMBER you have programmed at the FIRST row of the chain selected. This PAGE NUMBER may be from 0 through 99, the range of PAGE numbers in MIDI COMMAND.

The PAGE number will change as you ADVANCE/BACK through the chain to display MIDI COMMAND PAGE NUMBERS as you programmed them to appear on the rows within that chain.

This [C] command is NOT used to program a chain, only to SELECT a chain for use during performance.

CHAINS ARE LINKED ALPHABETICALLY

Chains normally "scroll" ALPHABETICALLY. If you get to row 20 on chain A and type [f1] to ADVANCE a PAGE, you will go to the page programmed on row 1 on chain B. At row 1 on chain A if you type [f3] to BACK up a page, you will go to the page programmed on row 20 of chain Z. See also discussion of JUMP below.

See below for details on how to program a chain.

//

[SHIFT][C] = EDIT A PAGE CHAIN

Type [SHIFT][C] and the screen will prompt:

SCREEN PROMPTS: YOUR RESPONSE:

EDIT CHAIN?

type [A-Z]
then [RETURN]

The [SHIFT][C] command lets you program a CHAIN. It displays the actual CHAIN NAME page; you enter page numbers in the order of you choice to program, or EDIT a CHAIN. The LETTER NAME of the CHAIN--which you provide by typing a single letter when giving this command, appears at the top of the video page following the word "CHAIN." That letter is the NAME of the CHAIN you wish to EDIT.

PROCEDURE: EDIT A PAGE CHAIN

Note that the CHAIN NAME video page comprises 20 numbered rows.

Type [--], a one or two digit MIDI COMMAND PAGE NUMBER from 0-99.

Type [RETURN] to enter that number.

Move the cursor DOWN on this page to other rows using the [CRSR] key that has arrows up/down. Use [SHIFT][CRSR] to move UP the page.

Enter page numbers as desired. Zero (0) is a valid MIDI COMMAND PAGE NUMBER. YOU MAY NOT "SKIP" A ROW BY ENTERING ZERO.

Type a single LETTER NAME of another CHAIN at any row to cause an immediate ADVANCE, or JUMP to another CHAIN. (See below).

Type [←], the left-arrow key above the [CONTROL] key to return to the MIDI COMMAND PAGE that was on the screen when you gave the [SHIFT][C] command.

The system will automatically save the PAGE CHAIN programming within memory, but not on the diskette. (Only a SAVE operation saves data to diskette. See D = SAVE OR LOAD FROM DISK command below, page HP-7.0).

You may use this command to call a CHAIN previously programmed so you can EDIT, or change that CHAIN programming.

CHAINS LINKED BY A "JUMP"

A JUMP gives you an option other than alphabetical ADVANCES from one chain to another. The JUMP lets you ADVANCE from CHAIN to CHAIN in an order YOU select.

KNOWING THE RULES FOR A JUMP IS IMPORTANT:

A JUMP takes you to ROW NUMBER 1 of a CHAIN.

A JUMP is strictly an ADVANCE to another chain.

Any scrolling BACK from one chain to another is ALWAYS strictly in reverse ALPHABETICAL order.

The system will NOT ADVANCE to entries on a CHAIN NAME page BELOW a JUMP, because the JUMP causes an EXIT from that CHAIN.

A CHAIN may JUMP to itself. The JUMP may be entered on any row number EXCEPT 1.

When no JUMP is programmed, all 26 CHAINS are in a masssive loop of 520 PAGES.

The JUMP does what is implied. It "skips" pages to ADVANCE you to another chain. The JUMP, however, does NOT affect how you BACK through CHAINS. YOU ALWAYS BACK THROUGH CHAINS IN REVERSE ALPHABETICAL ORDER.

JUMP: A PRACTICAL EXAMPLE

Use the [SHIFT][C] = EDIT A PAGE CHAIN command in order to program CHAIN A.

Program CHAIN A with a few PAGE numbers, and also a JUMP TO CHAIN F.

SELECT CHAIN A, using the [C] = SELECT A PAGE CHAIN.

Type [f1] to ADVANCE by PAGES through CHAIN A until you encounter the JUMP TO CHAIN F command.

The JUMP takes you to the FIRST ROW of CHAIN F. You COULD choose to ADVANCE through CHAIN F.

BUT, type [f3] to go BACK from the TOP of chain F.

NOTE that you will go BACK from the TOP of CHAIN F to the BOTTOM of CHAIN E--NOT BACK to CHAIN A. YOU WENT BACK ALPHABETICALLY! The system does NOT remember where it CAME FROM using a JUMP. It very literally READS CHAIN NAME page entries on the numbered rows as it ADVANCES or BACKS up to them.

WHEN CHAINS "SCROLL" BACK, THEY ALWAYS DO SO IN REVERSE THROUGH THE ALPHABET, FROM THE TOP OF ONE CHAIN TO THE BOTTOM OF PREVIOUS CHAIN.

CHAINS "SCROLL" FORWARD, OR ADVANCE ALPHABETICALLY FROM THE BOTTOM OF ONE CHAIN TO THE TOP OF THE NEXT CHAIN.

A JUMP ADVANCES YOU TO THE TOP OF THE CHAIN NAMED IN THE JUMP.

//

[D] = SAVE OR LOAD FROM DISK

DO NOT TYPE [D] when the MASTER PROGRAM diskette supplied with the SONG PRODUCER is in the disk drive.

Remove the MASTER PROGRAM diskette and insert a "DATA" diskette that is properly FORMATTED. See the "FORMATTING A DATA DISKETTE" section in the MIDI COMMAND INTRODUCTION part of this manual, page MC-19.0.

Type [D] and the screen prompts:

SCREEN PROMPTS:	YOUR RESPONSE:
LOAD OR SAVE?	type [L] or [S] then [RETURN]

If you type [L], you have chosen to LOAD a set of 100 MIDI COMMAND PAGES stored on a DATA diskette into the computer's memory. This set of PAGES will "overwrite" the existing contents of memory, destroying any PAGES that reside there.

If you type [S], you have chosen to SAVE the set of 100 MIDI COMMAND PAGES currently in the computer's memory on the DATA diskette in the disk drive.

THE SAVE TO DISKETTE OPERATION

After typing [S] then [RETURN] as described above, the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
SAVE NAME?	type [------] then [RETURN]

THE DISK LIGHT WILL COME ON, INDICATING THAT THE SAVE OPERATION IS IN PROGRESS. DO NOT DISTURB!

The entire set of 100 MIDI COMMAND pages currently in memory will be stored on diskette under the SAVE NAME you entered. A SAVE name may have up to 16 alphanumeric characters. Use letters and numbers, but NO PUNCTUATION MARKS.

A CAUTION: The set of PAGES in memory will "overwrite" the existing contents of a set of 100 PAGES on the diskette in one case. This will occur ONLY if you use a SAVE NAME that is the SAME as the name of a set of 100 PAGES already on the diskette. You may wish to do this to "update" an edited version of a set of pages.

The SAVE operation does NOT destroy what is in memory; it makes a COPY of it and stores it on the diskette.

THE LOAD FROM DISKETTE OPERATION

After typing [L] as described above, the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:

SAVE IT FIRST?	type [N] or [Y] then [RETURN]

Type [N] if you do NOT want to save the current contents of memory before "overwriting" with a LOAD operation.

Type [Y] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
SAVE NAME?	type [-----] then [RETURN]
SAVING -----	

As you see, a LOAD operation always contains the possibility of a SAVE operation. Just type [Y] for Yes to answer the prompt "SAVE IT FIRST?" This is a safeguard to protect against loss of memory contents. It provides a "second chance" in case you forgot to SAVE what was in memory before asking for a LOAD operation. SAVE what you want to keep on DISKETTE. A LOAD operation does NOT destroy anything that is on the DISKETTE.

Finally the screen prompts:

SCREEN PROMPTS:	YOUR RESPONSE:
LOAD NAME?	type [-----] then [RETURN]
LOADING -----	

The disk light goes on, and system looks for a set of PAGES on the diskette in the disk drive. If it finds the EXACT name you typed in response to the prompt, it will load that set of PAGES into memory.

If the EXACT name you typed in response to the prompt above is NOT on the diskette, you will be returned to the PAGE in memory from which you gave the [D] command. This may cause a "DISK ERROR."

DISK ERROR: A BLINKING LIGHT

When a disk error occurs, if you have an INDIVIDUAL disk drive that is connected with a cable to the computer, simply remove the diskette, and turn the disk drive OFF, then ON. This "resets" the disk drive.

If you have a portable computer with disk drive integrated there is only one ON/OFF switch. DO NOT TURN THIS SWITCH OFF TO RECOVER FROM A DISK ERROR. TURNING THIS SWITCH OFF CAUSES A LOSS OF DATA IN MEMORY. To recover, type [D] and LOAD a set with a VALID name from diskette.

If there is NO set of pages on the diskette with a valid name, or you can't remember the name, or asked for a LOAD by accident, etc.: recover from a disk error in this case by typing [D] and doing a SAVE operation, using any SAVE NAME, even if you only save blank pages.

//

[F] = CHANGE PROGRAM OFFSETS

Type [F] and the screen prompts:

SCREEN PROMPTS:	YOUR RESPONSE:
ENTER PROGRAM OFFSET 0 OR 1	
OFFSET W ? 0	type [0] or [1] then [RETURN]
OFFSET X ? 0	type [0] or [1] then [RETURN]
OFFSET Y ? 0	type [0] or [1] then [RETURN]
OFFSET Z ? 0	type [0] or [1] then [RETURN]

When you ADVANCE/BACK through quadsets on a MIDI COMMAND PAGE, the system reads each column W, X, Y, Z and sends the MIDI PROGRAM numbers found in that column to the corresponding bus W, X, Y, or Z.

If the PROGRAM OFFSET for a bus is zero (0), the MIDI PROGRAM numbers encountered in that column are sent NORMALLY, without any change. When the OFFSET is 0 for a bus, there is no effect on the MIDI PROGRAM numbers entered in that bus column. Note that initial, or default programming is zero (0) for all four buses, meaning NO OFFSET, no change.

When you program a bus to have a PROGRAM OFFSET of one (1), this causes MIDI COMMAND to "OFFSET BY 1" any MIDI PROGRAM number before sending it to that bus. A number entered in the column of a bus that is OFFSET BY 1 will be REDUCED BY ONE before being sent to the bus. For example, MIDI PROGRAM number 30 encountered on a bus that is OFFSET BY 1 will send a 29 to the bus. A bus that IS OFFSET BY 1 subtracts 1 from each number you program FOR THAT BUS.

THE OFFSET AFFECTS AN ENTIRE BUS, THEREFORE AN ENTIRE COLUMN ON THE MIDI COMMAND PAGE. THE OFFSET AFFECTS ALL PAGES IN THE SET OF 100.

The purpose of this OFFSET is to adjust for different viewpoints that manufacturers have adopted regarding how a MIDI PROGRAM number appears on the instrument's display. Some manufacturers have elected to represent MIDI PROGRAM number 0 as number 1 on the display of the instrument, an "offset-add" if you will. If you send a MIDI NUMBER, say, 30 from a column on the MIDI COMMAND PAGE, that instrument will "offset-add" to display 31!

The [F] = CHANGE PROGRAM OFFSETS command can be used to OFFSET the bus to which you have connected such an instrument. Program that bus with an OFFSET of 1. When you enter MIDI PROGRAM number "30," into the column for that bus, the OFFSET 1 programming will cause "29" to be sent to that bus, and the instrument with the "offset-add" will ADD 1 to display "30!"

In essence, the [F] OFFSET BY 1 is an "offset-subtract" that counters the "offset-add" of some instruments. Because there are no negative MIDI PROGRAM numbers, MIDI PROGRAM number 0 may be entered on the video page, but 0 can NOT be sent in a MIDI COMMAND bus that you have programmed with an OFFSET of 1. (Zero minus one equals negative one, which is not a valid MIDI PROGRAM number.

//

[H] = GO TO HELP SCREEN

Type [H] to go to the HELP PAGE, video page(s) that present the keystroke(s) for all the commands available in MIDI COMMAND.

The commands on the HELP PAGE may NOT be given while the HELP PAGE is on the screen. Type the [←] left-arrow key to return to the MIDI COMMAND PAGE from which you departed by typing [H]. Then give the command desired.

//

[I] = SELECT INCREMENT MODE

Type [I] and the word "INCREMENT" appears in the status line immediately below the graphic **** display.

The alternative to the INCREMENT mode is the CHAIN mode (see [C] = SELECT A PAGE CHAIN command above). Type [I] to go to the INCREMENT mode from the CHAIN mode.

In the INCREMENT mode PAGE ADVANCE/BACK is strictly SERIAL, from one page number to the pages immediately ADJACENT. For instance, if you are on PAGE 37 and you type [f1], you will ADVANCE to PAGE 38. If you then type [f3] you will BACK from 38 to 37 again. When you ADVANCE/BACK by PAGE, you always go to the TOP quadset on the page you go TO.

The INCREMENT mode is the way to simply go through the PAGES in their numerical order. The INCREMENT mode is always available, regardless of the ordering of PAGES you have arranged into CHAINS.

//

[L] = LOCAL CONTROL ON OR OFF

Type [L] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
LOCAL CONTROL 1=ON OR 2=OFF	type [1] or [2] then [RETURN]
WHAT MIDI BUS?	type [W] or [X] or [Y] or [Z] then [RETURN]

The purpose of this command is to send a MIDI code on a bus that can ENABLE/DISABLE the internal connection between an instrument's keyboard and its voices or tone generators.

When this internal connection is DISABLED by sending this MIDI code, this does NOT disable the instrument's MIDI IN, an input that receives EXTERNAL MIDI keyboard information from an EXTERNAL source.

What advantage does this command offer? Suppose you want to leave your "SLAVE" instruments backstage and still play them from a "MASTER" keyboard on stage. Ideally the KEYBOARDS of the SLAVES should be DISABLED, to avoid accidental playing of those keys, or "assistance" from people backstage who would like to "help" you play!

But the MIDI IN of those slaves MUST operate if you are to play them REMOTELY using a MASTER keyboard. So, we have the [L] = LOCAL CONTROL ON OR OFF command, which accomplishes both goals. There is more, but first, let's see how LOCAL control works.

The INTERNAL connection between an instrument's keyboard and its voices we refer to as LOCAL control of voices. If LOCAL control is OFF, the instrument is told, in essence, "ignore what your keyboard tells you, just listen to your MIDI IN." If LOCAL control is ON, the instrument plays normally.

Selecting [1] in the prompt above will ENABLE or turn ON the LOCAL connection. Selecting [2] will DISABLE or turn OFF the LOCAL connection.

Several conditions must be met for turning LOCAL control ON/OFF for an instrument. The most obvious is that the instrument's MIDI IN must be connected to one of the SONG PRODUCER MIDI outputs, W-OUT, X-OUT, Y-OUT, or Z-OUT. ONLY THEN IS THE INSTRUMENT CAPABLE OF RECEIVING THE MIDI CODE THAT THIS COMMAND PRODUCES.

Next, you must select, in the prompt above, the appropriate bus W, X, Y, or Z that is associated with the MIDI output connected to the instrument. YOU HAVE TO CHOOSE THE BUS YOUR INSTRUMENT IS CONNECTED TO.

Finally, the instrument to which you send this MIDI code must be capable of ACTING on the MIDI code. NOT ALL INSTRUMENTS HAVE THE CAPABILITY TO RESPOND TO THIS "LOCAL" MIDI CODE. For instance, the MEMORYMOOG PLUS does NOT have this particular MIDI capability.

The first two requirements are easy to meet. But how do you KNOW whether your instrument is capable of responding to this LOCAL MIDI code? Many MIDI instruments DO have this capability. YOU COULD READ YOUR OWNER'S MANUAL FOR THE INSTRUMENT TO FIND OUT. (Heaven forbid!) Look for a discussion of keyboard control, etc. Or you can TEST your instrument by doing the following:

> Connect the MIDI OUT of the instrument to the MIDI IN of the SONG PRODUCER.
>
> Connect the MIDI IN of the instrument to the X-OUT jack on the SONG PRODUCER.
>
> Type [X] to turn the X bus OFF. The letter X should disappear from the top of the X column on the screen.
>
> PLAY THE KEYBOARD OF THE INSTRUMENT.

It will play, proving that the INTERNAL connection, or LOCAL control is currently ON. (You turned EXTERNAL control through bus X OFF by typing [X]. So this leaves INTERNAL control as the only possibility.)

Turn the LOCAL (internal) control OFF by doing the following:

> Type [L].
>
> Type [2].
>
> Type [RETURN].
>
> Type [X].
>
> Type [RETURN].
>
> NOW PLAY THE KEYBOARD.

IF IT STILL PLAYS, IT DOES NOT HAVE THE CAPABILITY TO RECEIVE THE MIDI CODES GENERATED BY THE [L] COMMAND. OTHERWISE IT WOULD HAVE TURNED THE KEYBOARD OFF AS INSTRUCTED. It is not productive to connect both MIDI IN and MIDI OUT of such an instrument to the SONG PRODUCER. That is, do not make this instrument a combination MASTER/SLAVE instrument (see explanation below).

IF THE INSTRUMENT STILL PLAYS, SKIP TO THE SECTION BELOW TITLED "THE MASTER/SLAVE INSTRUMENT."

IF THE INSTRUMENT DOES NOT PLAY WHEN YOU PLAY THE KEYBOARD, THIS PROVES THAT THE LOCAL "OFF" CODE WAS RECEIVED.

IN THIS CASE, let's reconnect the EXTERNAL control of this instrument's voices through its MIDI IN:

> Type [X]. (X appears).
>
> NOW PLAY THE KEYBOARD.

If the keyboard DOES play now, this confirms that its MIDI IN is in good working order. What you have now is an instrument being played "REMOTELY" from an "EXTERNAL" keyboard. That's right, the instrument doesn't know that the "external" keyboard is the one built in! The notes you play pass out of the instrument's MIDI OUT, CAN BE processed by the SONG PRODUCER, go out of the X-OUT jack on a MIDI cable back into the instrument through its MIDI IN.

If this is done successfully, this instrument can be used as a "MASTER/SLAVE" instrument.

THE MASTER/SLAVE INSTRUMENT

As demonstrated by the tutorial above, some instruments can function both as the master AND a slave instrument. Such an instrument must be capable of LOCAL ON/OFF control as indicated.

The MASTER instrument is the one whose MIDI OUT is connected to the MIDI IN of the SONG PRODUCER.

You may choose to connect one of the MIDI outputs, e.g. X-OUT, to the MIDI IN of the master instrument.

What is the advantage to this dual master/slave MIDI connection? In this case, your master instrument's MIDI PROGRAM number, transposition, etc. will be under control of MIDI COMMAND quadsets, by virtue of its "slave" status.

A SLAVE IS PROVIDED "EXTERNAL" KEYBOARD INFORMATION THROUGH ITS MIDI IN. IF YOU DO NOT SEND A "LOCAL OFF" COMMAND TO THE BUILT-IN KEYBOARD OF A MASTER/SLAVE INSTRUMENT, IT WILL RECEIVE KEYBOARD INFORMATION FROM "TWO" SOURCES: THE "MASTER," OR BUILT-IN KEYBOARD, AND "EXTERNAL" KEYBOARD INFORMATION AT ITS MIDI IN.

SUPPOSE YOU PROGRAM A TRANSPOSITION AND ROUTE IT TO THE MIDI IN OF THE MASTER/SLAVE AND DO NOT TURN "LOCAL CONTROL OFF." WHICH SET OF KEYBOARD INFORMATION SHOULD THE MASTER/SLAVE INSTRUMENT RESPOND TO: THE BUILT-IN KEYBOARD, OR THE TRANSPOSED MIDI NOTES ROUTED TO ITS MIDI IN?

Since LOCAL keyboard control ON/OFF is invisible on screen it is good practice to either ignore this [L] command, leaving LOCAL CONTROL ON for all buses; or to give the [L] command and make sure each bus is programmed as you want it to be.

///

[N] = NAME THIS PAGE

Type [N] to name the page currently on the screen. The screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:

NAME? type [-----]
then [RETURN]

The name you enter will appear on the status line following the word "PAGE" and page number. Allowable name characters include letters and numbers, but NO PUNCTUATION marks. Entry is restricted to no more than 15 characters.

The name of a page appears on a CHAIN NAME page when that page is programmed into a CHAIN. See [SHIFT][C] = EDIT A PAGE CHAIN command, page HP-4.0.

//

[SHIFT][N] = SHOW ALL PAGE NAMES

Type [SHIFT][N] and the names for MIDI COMMAND PAGES 0-19 will be displayed in numerical order.

Type the [SPACE BAR] to "continue," or display the names for PAGES 20-39.

Type the [SPACE BAR] as necessary to view all the page names in serial order from 40-99, in groups of 20.

Type the [←] left-arrow key at the upper left of the keyboard to go back to the PAGE that was on screen when you typed [SHIFT][N].

//

[O] = ENTER AN OFF

Move the cursor to a PROGRAMS cell on the page.

Type the letter [O].

Note that the word "OFF" appears at that cursor position.

When the white quadset bar in on a row that displays the word OFF, the bus where OFF appears is turned off.

The appearance of OFF in one quadset does not affect other quadsets. That is, a single OFF in a quadset does NOT turn a bus off for the entire page.

See also TURNING A BUS OFF IN A QUADSET in the MIDI COMMAND INTRODUCTION, page MC-9.0.

//

[P] = SELECT A PAGE

Type [P] and the screen prompts:

SCREEN PROMPTS:	YOUR RESPONSE:
PAGE?	type [0-99] then [RETURN]

This command allows RANDOM access to any MIDI COMMAND PAGE, from 0-99. Its use does not change the order of pages, nor affect any programming of PAGE CHAINS. See also RANDOM ACCESS TO ANY MIDI COMMAND PAGE in the MIDI COMMAND INTRODUCTION, page MC-4.0.

//

[S] = SWITCH PROGRAMS OR PAGES

This command is used to "toggle," or alternate how MIDI COMMAND uses footswitches connected to the FOOTSWITCH 1 and 2 jacks on the SONG PRODUCER.

The last line on the video screen will alternately display "SWITCHING PROGRAMS," then "SWITCHING PAGES" when you toggle using the [S] key.

If SWITCHING PROGRAMS is displayed, footswitches inserted into SONG PRODUCER FOOTSWITCH 1 and 2 jacks will ADVANCE/BACK through PROGRAMS rows, or quadsets.

If SWITCHING PAGES is displayed, footswitches inserted into SONG PRODUCER FOOTSWITCH 1 and 2 jacks will ADVANCE/BACK through PAGES. If you are in the INCREMENT mode, this will allow you to ADVANCE/BACK through PAGES serially, in numerical order. If you are in the CHAIN mode, this will allow you to ADVANCE/BACK through CHAIN PAGES in whatever order you have programmed them.

In either case, a footswitch connected to FOOTSWITCH jack 1 ADVANCES and a footswitch connected to FOOTSWITCH jack 2 goes BACK. See also USING FOOTSWITCHES IN PERFORMANCE in the MIDI COMMAND INTRODUCTION, page MC-22.0.

//

[W],[X],[Y],[Z] = TOGGLE MIDI BUS ON OR OFF

Each key [W], [X], [Y], [Z] can be "toggled" or typed repeatedly to turn the bus it names alternately ON then OFF then ON, etc.

The ON/OFF status of each bus is displayed at the top of each bus column, the KEYBOARDS line on the screen.

The buses are arranged W-Z from left-to-right. If the bus letter W, X, Y, or Z is displayed, that bus in ON. If the bus is OFF, a small dark block takes the place of the bus letter.

The ON/OFF is GLOBAL. It affects the whole PAGE, and EVERY page until its status is changed. See also TURNING MIDI BUS W, X, Y, Z ON/OFF GLOBALLY in the MIDI COMMAND INTRODUCTION, page MC-6.0.

//

[SHIFT][CLR HOME] = CLEAR A CHAIN OR A PAGE

To clear a MIDI COMMAND PAGE, that PAGE must be on the screen. When it is, type [SHIFT][CLR HOME] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
CLEAR PAGE --?	type [Y] or [N] then [RETURN]

The prompt asks if you wish to clear the page and gives the NUMBER -- of the page.

Type [Y] for Yes to clear the page. Type [N] for No, if you do NOT wish to clear the page.

If you wish to clear a CHAIN, that CHAIN NAME page must be on the screen. Use the [SHIFT][C] = EDIT A PAGE CHAIN command to call up the CHAIN (see above). Then type [SHIFT][CLR HOME] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
CLEAR CHAIN -?	type [Y] or [N] then RETURN then type [←]

Type the [←] left-arrow key after clearing a CHAIN. This returns you to the MIDI COMMAND page on the screen when you gave the [SHIFT][C] command to EDIT A PAGE CHAIN to be cleared.

//

[SPACE BAR] = ENTER A NO CHANGE SIGN

Move the cursor to a PROGRAMS cell that has an OFF or a MIDI PROGRAM number entry.

Type the [SPACE BAR].

Note that the entry is replaced by a BLANK.

A blank in a column on the MIDI COMMAND PAGE means "no change." A blank is interpreted as NO CHANGE OF THE PROGRAM NUMBER THAT WAS PREVIOUSLY ON THE BUS.

See especially THE BLANK CELL and FILLING IN THE BLANKS ON A PAGE in the MIDI COMMAND INTRODUCTION, page MC-9.0.

//

[f1] = ADVANCE PAGES

Type the [f1] function key to ADVANCE by PAGES. PAGES ADVANCE in numerical order in INCREMENT mode. In CHAIN mode, PAGES ADVANCE by row number on the CHAIN NAME page--in the order you programmed PAGES in the CHAIN.

ADVANCE by PAGE goes to page TOP.

//

[f3] = BACK PAGES

Type the [f3] function key to BACK BY PAGES. PAGES BACK in numerical order in INCREMENT mode. In CHAIN mode, PAGES BACK by row number on the CHAIN NAME page--in the order you programmed PAGES in the chain.

BACK by PAGE goes to page TOP.

//

[f5] = BACK PROGRAMS

Type the [f5] function key to BACK through PROGRAMS, or quadsets on PAGES.

SCROLL from page TOP to page BOTTOM when scrolling off page going BACK by PROGRAMS.

//

[f7] = ADVANCE PROGRAMS

Type the [f7] function key to ADVANCE through PROGRAMS, or quadsets on PAGES.

SCROLL from page BOTTOM to page TOP when scrolling off page due to ADVANCE by PROGRAMS.

//

[+] THEN [0-48] OR [-] THEN [0-36] = ENTER A TRANSPOSE NUMBER

> Move the cursor to bus W, X, Y, or Z in the TRANSPOSE row.
>
> Type [+] to transpose all notes sounded on the slave instrument connected to that bus UP an interval.
>
> Type the size of the UP interval numerically

[0-48], where each digit represents a HALFSTEP on the keyboard.

Type [RETURN] to enter.

A HALFSTEP is the interval between any two IMMEDIATELY ADJACENT notes, including all black and white notes on the keyboard. For example "+2" will transpose UP 2 halfsteps on the keyboard, or a "MAJOR SECOND," as it is known musically. A TRANSPOSE of "-7" will transpose DOWN 7 halfsteps, or a "PERFECT FIFTH," etc.

Type [-] to transpose all notes sounded on the slave instrument connected to that bus DOWN an interval.

Type the interval of transposition from [0-36], where each digit represents a HALFSTEP on the keyboard.

Type [RETURN] to enter.

TRANSPOSITION AFFECTS ONLY THE PAGE ON WHICH IT APPEARS. EACH PAGE MAY HAVE DIFFERENT TRANSPOSITION NUMBERS.

TO CANCEL A TRANSPOSITION, OR TO CAUSE NO TRANSPOSITION, TYPE [0] then [RETURN] IN THE TRANSPOSE CELL. See especially TRANSPOSITION OF SLAVE INSTRUMENTS in the MIDI COMMAND INTRODUCTION, page MC-17.0.

//

[=] = COPY A PAGE TO ANOTHER

Type [=] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
COPY PAGE -- TO ?	type [0-99] then [RETURN]

The prompt provides the PAGE NUMBER "--" of the page that is on the screen when you type [=]. This is the PAGE that will be COPIED. The prompt asks which PAGE NUMBER, signified by the question mark "?", you want the copy to occupy.

Your response is to type the MIDI COMMAND PAGE NUMBER from 0-99 where you want the copy to appear.

TAKE NOTE that this command will cause data on the page that is COPIED to "overwrite," or destroy data on the page whose number you enter as the PAGE THAT RECEIVES the copied information. Choose a page that is blank in response to the prompt, or a page that is no longer useful to you. The page that receives the copy loses its old data forever. If that page is used throughout many CHAINS, the impact may be significant.

If you would like to view the NAMES of ALL your PAGES before copying onto one of them, to jog your memory about what they may contain, use the [SHIFT][N] = SHOW ALL PAGE NAMES command. See page HP-14.0.

//

[↑] = REPLACE SPACES WITH PROGRAMS

Type [↑], the up-arrow key found above the [RETURN] key, to fill the blank cells under a PROGRAM NUMBER with that PROGRAM NUMBER.

Blanks in the PROGRAMS area of a MIDI COMMAND PAGE are interpreted as "NO CHANGE OF PROGRAM NUMBER." The blanks BELOW a PROGRAM NUMBER therefore carry the same information as though the PROGRAM NUMBER had been entered at each blank cell, provided you are ADVANCING the quadset bar.

It is possible to make a single PROGRAM NUMBER entry, leave blanks below it in that column, and "FILL IN" those blanks with that PROGRAM NUMBER using this command. You need not laboriously enter a PROGRAM NUMBER down many cells in a column. Use this command instead.

BLANKS below OFF entries are not "FILLED" by this command. Any blanks left after this command is executed are still interpreted as "NO CHANGE OF PROGRAM NUMBER," meaning WHATEVER program number was on the bus previously is in operation.

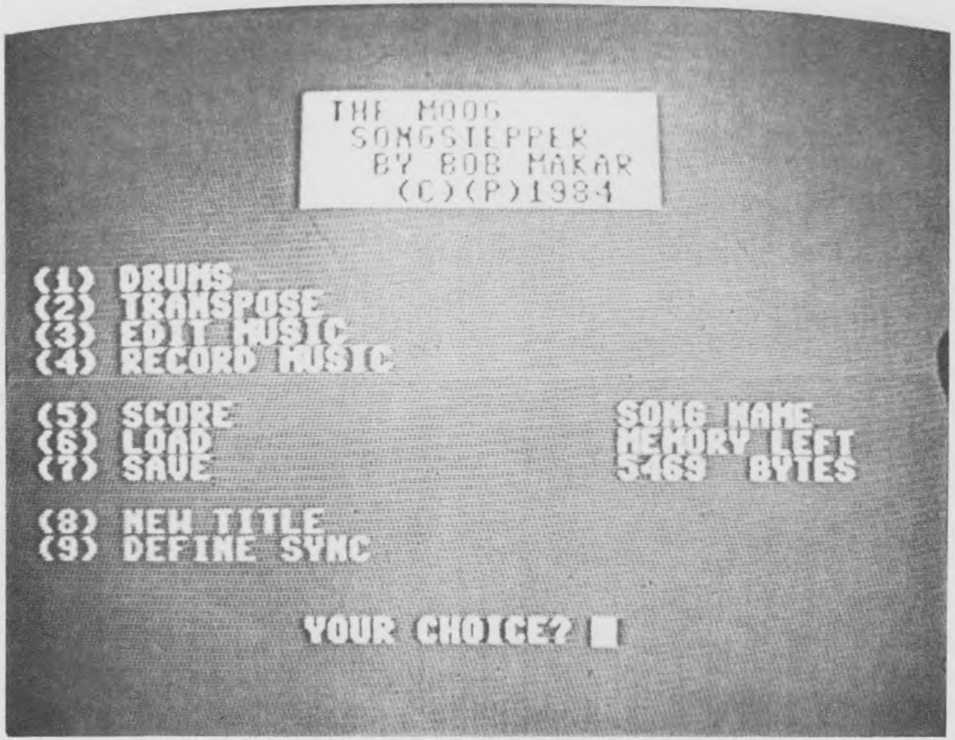
You may fill in any remaining blanks with PROGRAM NUMBERS or OFF entries. See especially THE BLANK CELL: NO CHANGE OF PROGRAM NUMBER and FILLING IN THE BLANKS ON A PAGE in the MIDI COMMAND INTRODUCTION, page MC-9.0.

//

THIS CONCLUDES THE HELP PAGE GLOSSARY. PLEASE BE SURE TO READ THE SECTION TITLED "MIDI COMMAND INTRODUCTION."

HAPPY SPLIT/LAYERING, TRANSPOSING, AND MULTI-TIMBRAL ORCHESTRATING WITH MIDI COMMAND. MAY YOUR HANDS NEVER LEAVE THE MASTER KEYBOARD!

SONGSTEPPER INTRODUCTION



THE MOOG
SONGSTEPPER
BY BOB MAKAR
(C)(P)1984

(1) DRUMS
(2) TRANSPOSE
(3) EDIT MUSIC
(4) RECORD MUSIC

(5) SCORE
(6) LOAD
(7) SAVE

SONG NAME
MEMORY LEFT
5469 BYTES

(8) NEW TITLE
(9) DEFINE SYNC

YOUR CHOICE? █

SONGSTEPPER INTRODUCTION

THIS SECTION IS A TUTORIAL. IF YOU FOLLOW DIRECTIONS, IT "TUTORS" YOU, OR TELLS YOU STEP-BY-STEP HOW TO MAKE MUSIC USING SONGSTEPPER OR MIDI DRUM SONGSTEPPER SOFTWARE.

Please read the GETTING STARTED section in this manual to make sure you have made the right connections from the SONG PRODUCER to your other gear.

Please read the MASTER MENU section in this manual to make sure you understand which version of SONGSTEPPER you should select from the MASTER MENU in order to do this tutorial.

To get the most from this tutorial, follow instructions EXACTLY and don't experiment on your first try.

After you complete this tutorial, and are satisfied that you have learned what this "tooter tutor" teaches, go back through the tutorial and experiment at each step as much as you like!

FORMAT FOR SCREEN PROMPTS AND YOUR RESPONSE

The SONG PRODUCER carries on a conversation with you. Often, a message appears on the screen that "PROMPTS" a response from you. In this tutorial, the format for this PROMPT/RESPONSE will be, for example:

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [1] then [RETURN]

As you see, a message from the computer appears in CAPITALS, as it does on the screen. The screen prompt "YOUR CHOICE?" requires you to make a choice.

Your response to the prompt appears, using both capitals and small letters, under the "YOUR RESPONSE" heading. In this example, your response would be to type and release the number key [1]. Then type and release the [RETURN] key.

This tutorial will tell you exactly what to type on the computer keyboard as your response to a screen prompt.

TO [SHIFT] OR NOT TO [SHIFT]:
THAT IS NEVER THE QUESTION!

Keys on the computer keyboard are represented in this manual using CAPITAL letters with brackets [ ]. The [RETURN] key is an example, as shown above.

Ordinary alphabet keys are already capital letters on the computer keyboard, and do NOT require use of the [SHIFT] key. Use the [SHIFT] key with keys of the alphabet ONLY when told to do so, like this:

[SHIFT][T]

The command above is used to view or change the TEMPO or speed of a song. THE FORMAT ABOVE IS FOR A "TWO-KEY" COMMAND. To give such a command, type and HOLD the [SHIFT] key down. Then type the other key, [T] in this example.

DISTINCTION BETWEEN THE NUMBER ZERO AND THE LETTER "O"

In this manual, zero has a slash through it, e.g. 100, 101, 102. The letter "O" has no slash.

REFERENCES TO COMMANDS FOR FURTHER STUDY

Throughout this tutorial, references will be made to commands that appear as entries in the SONGSTEPPER & MIDI DRUM SONGSTEPPER DICTIONARY OF COMMANDS. This DICTIONARY OF COMMANDS contains ALL the commands that may be given in SONGSTEPPER and MIDI DRUM SONGSTEPPER. Study all command(s) referred to at your leisure AFTER you have gone straight through this tutorial AT LEAST ONCE.

THE TOOTER TUTOR

THIS TUTORIAL WILL NOT MAKE YOU A MASTER SONG PRODUCER. BUT IT WILL GET YOU STARTED!

Turn the computer ON.

Insert the MASTER PROGRAM DISKETTE in the disk drive.

Close the disk drive door.

Type:

```
LOAD"*",8,1
```

You must produce EXACTLY the eleven characters shown above, and nothing else. That is, type [L], then [O], then [A], then [D], etc. The quote mark " requires use of the [SHIFT] key. The punctuation marks are commas.

Use the [INST DEL] key to delete the last entry on the screen if you make typing errors.

When the screen matches what is shown above:

Type [RETURN]

The computer will take a few seconds and then display the MASTER MENU.

If you have any question about which PROGRAM to select, see the MASTER MENU part of this manual.

SCREEN PROMPTS:	YOUR RESPONSE:
PROGRAM NUMBER?	type [1] or [4] then [RETURN]

The disk drive light will turn ON. Do not disturb until this light does OFF. It takes about 90 seconds to load either SONGSTEPPER program. Then the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
LOAD A SONG FROM DISK?	type [N] then [RETURN]
SONG TITLE?	type a name, (use letters) then [RETURN]

You now see the MENU for SONGSTEPPER or MIDI DRUM SONGSTEPPER. This MENU tells what you can do and which number to select to get where you can do it. Let's make some drum sounds first:

DRUMS (1)

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [1] then [RETURN]
SEGMENT NAME?	type [D] then [A] then [RETURN]

The screen now shows PAGE 1 of a blank DRUMS (1) segment named DA.

On the screen there are two "grids." The lower grid is simply a continuation of the upper grid.

ENTERING DRUM NUMBERS

Note that the cursor symbol is at the bottom of the FIRST column of the upper grid.

Type [1].

Type [6].

Type [8].

Type [2].

Note that the numbers you type appear in the column ABOVE the cursor.

You learned that when you type a number from 1 through 8, that number appears in the column above the cursor. The number 1 appears in the first row; 2 in the second row, etc.

This exercise illustrates the ENTER DRUM NUMBER command [1-8]. See also the AT DRUM TRACK? command [@] if working with MIDI DRUM SONGSTEPPER.

DELETING DRUM NUMBERS

Type [D] then [1].

Type [D] then [6].

Type [D] then [8].

Look at the screen.

Type [7].

Look at the screen.

Type [D] then [7].

Look at the screen.

You learned that when you type [D], then a number, that number will be DELETED in the column above the cursor.

This exercise illustrates the DELETE DRUM NUMBER command [D] then [1-8]. For further study, see also the DELETE DRUM NUMBER command [0] then [1-8], and the DELETE ALL ABOVE THE CURSOR command [INST DEL].

MOVING THE CURSOR TO OTHER COLUMNS

Type the [SPACE BAR] several times.

Note that the cursor moves FORWARD.

Type and HOLD the [SHIFT] key and type the [SPACE BAR] several times.

Note that the cursor moves BACK.

You learned that the cursor can be moved FORWARD and BACK using the [SPACE BAR] and [SHIFT] key.

This exercise illustrates the CURSOR FORWARD command [SPACE BAR], and the CURSOR BACK command [SHIFT][SPACE BAR]. For further study see also the CURSOR HOME command [CLR HOME].

ENDING A DRUMS (1) SEGMENT

Move the cursor to the LAST column of the upper grid.

Type [E]. Look at the screen.

Type the [SPACE BAR] until the cursor stops.

Type & hold the [SHIFT] key, then type [E].

Look at the screen.

Type [E] again.

Type & hold the [SHIFT] key, then type the [SPACE BAR] several times. The cursor does NOT move.

Release the [SHIFT] key.

Type the [SPACE BAR] repeatedly UNTIL THE CURSOR STOPS MOVING.

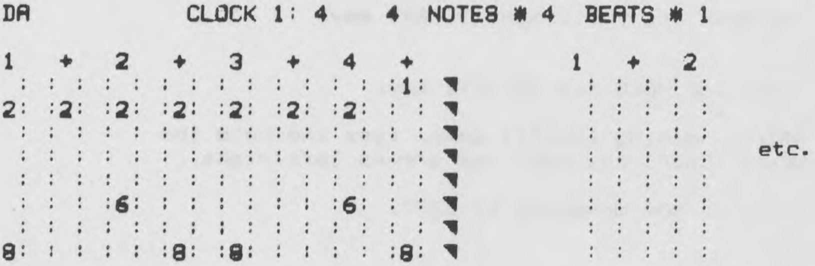
You learned that the "triangles" graphic may be entered/deleted in a column by typing [E] or [SHIFT][E]. This graphic marks the END of a DRUMS (1) segment, and is required.

Also, the exercise shows that the cursor will NOT go FORWARD past the END graphic in a DRUMS (1) segment.

See the END DRUMS SEGMENT command [E], and the ERASE END DRUMS SEGMENT command [SHIFT][E] for further details.

PUTTING IT TOGETHER

Using what you have learned, program segment DA to look like this on the screen:



```
DA           CLOCK 1: 4   4 NOTES # 4  BEATS # 1

1   +   2   +   3   +   4   +           1   +   2
 : : : : : : : : : : : : : :1: ◥         : : : : :
2: :2: :2: :2: :2: :2: :2: : : ◥         : : : : :
 : : : : : : : : : : : : : : : ◥         : : : : :
 : : : : : : : : : : : : : : : ◥         : : : : :   etc.
 : : : : : : : : : : : : : : : ◥         : : : : :
 : : : :6: : : : : : : :6: : : ◥         : : : : :
 : : : : : : : : : : : : : : : ◥         : : : : :
8: : : : : :8: :8: : : : : :8: ◥         : : : : :
```

(Upper Grid) (Lower Grid)

Now, type [P] to PLAY the segment ON THE SCREEN.

Type the [f3] function key to STOP playing.

When any DRUMS (1) segment on the screen is played, that segment REPEATS until [f3] is typed to stop the playing.

Notice that a DRUMS (1) segment plays from LEFT TO RIGHT. When a number is encountered in a column, its "drum" is played. Blank cells in the grid are RESTS.

PLAY A DRUMS (1) SEGMENT ON THE SCORE (5)

YOU MAY CHOOSE TO ENTER ANY OR ALL OF THE DRUMS (1) SEGMENTS YOU HAVE PROGRAMMED ON THE SCORE (5).

Type the [f5] function key to go to the MENU.

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [5] then [RETURN]

You see before you the SCORE (5). The screen displays SIX columns: TWO drum tracks, D1 and D2, and FOUR of the eight voice tracks, V1 through V4. TWENTY "score lines" are available across these columns on the screen.

The name you typed for this song appears at the upper left. At the upper right of the screen, the words "EDIT MODE" appear. The EDIT MODE lets you enter, or EDIT (change) entries on the SCORE (5). The SCORE (5) is NOT playing when it is in the EDIT MODE.

CURSOR CONTROL ON THE SCORE (5)

Locate the two [CRSR] keys.

Type and HOLD the [CRSR] key that has arrows left/right.

Note cursor movement to RIGHT.

Release the left/right [CRSR] key.

Type and HOLD the [SHIFT] key.

While holding [SHIFT] down, type and hold the same [CRSR] key that has arrows left/right.

Note cursor movement to LEFT.

Type and HOLD the up/down [CRSR] key.

Note cursor movement DOWN.

Hold this [CRSR] key down until the cursor goes to the bottom of the screen, and the screen columns go blank and refill, several times.

Release that up/down [CRSR] key.

Look at the score line numbers at the top and bottom of the screen.

Type and HOLD the [SHIFT] key down.

While holding [SHIFT] down, type and hold the up/down [CRSR] key.

Note movement of cursor UP.

Continue holding BOTH these keys until the screen columns repetitively go blank and refill several times, and:

Release BOTH keys when you are certain score line 1 is once again at the top of the screen.

You learned that cursor movement on the SCORE (5) is a "straight stick":

"[SHIFT] is LEFT/UP to you!"

You learned that the screen will hold 20 consecutive score lines at a time, and is capable of "scrolling" up and down, but NOT left and right.

See the SHOW OTHER SCORE VOICES command [/] for details on how to see SCORE (5) voices V1-V8.

See the FIRST LINE ON VIDEO command [F] for an easier way to show any 20 of the 120 score lines.

ENTER A DRUMS (1) SEGMENT ON THE SCORE (5)

Move the cursor to column D1.

Move the cursor to score line 10.

Type [1].

If you make a typing error, DELETE by typing the [INST DEL] key. Or, finish the entry, then OVERWRITE the incorrect entry by retyping the correct version.

Type [D] then [A].

Type the [f1] function key.

Lay back and listen.

To enter a DRUMS (1) segment on the SCORE (5), you first type the NUMBER of times from [1] through [9] you want the segment to play.

Then type the two character NAME of the segment.

See the ENTER SEGMENT (DRUM) command [1-9] then [--].

See also the MENU MODES command [1-9] then [RETURN] in the DICTIONARY OF COMMANDS.

PLAY IT AGAIN, SONG . . .

Move the cursor to score line 11.

Type [3].

Type [D] then [A].

Type the [f1] function key.

Lay back and listen. Let it finish.

Type the [INST DEL] key to delete the entry at score line 11.

Move the cursor to line 17.

Type [3].

Type [D] then [A].

Type the [f1] function key.

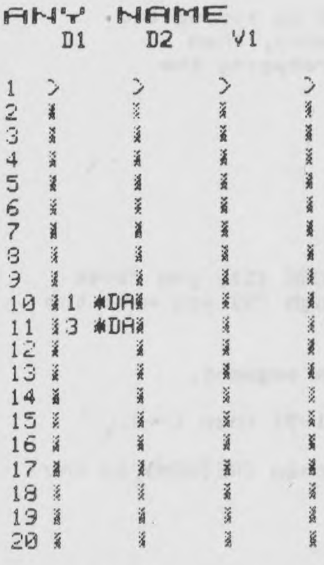
Listen. It's the same as before.

You learned the MOST important point about the SCORE (5):

"BLANK score lines are NOT RESTS!"

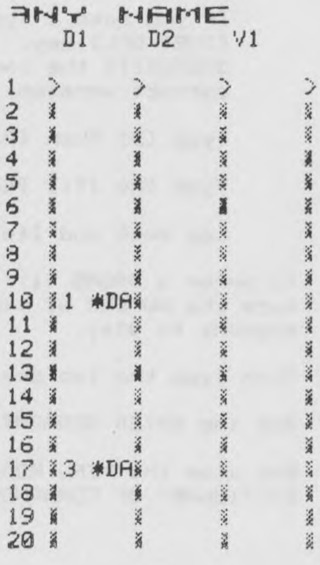
The SCORE (5) starts from the >>>>>> symbols, and goes DOWN each column, score line by score line, playing ENTRIES. All blank score lines are ignored.

THE SCORE (5) PLAYS . . .



```
ANY NAME
   D1    D2   V1
1  >     >    >    >
2  ▒     ▒    ▒    ▒
3  ▒     ▒    ▒    ▒
4  ▒     ▒    ▒    ▒
5  ▒     ▒    ▒    ▒
6  ▒     ▒    ▒    ▒
7  ▒     ▒    ▒    ▒
8  ▒     ▒    ▒    ▒
9  ▒     ▒    ▒    ▒
10 ▒1 *DA▒    ▒    ▒
11 ▒3 *DA▒    ▒    ▒
12 ▒     ▒    ▒    ▒
13 ▒     ▒    ▒    ▒
14 ▒     ▒    ▒    ▒
15 ▒     ▒    ▒    ▒
16 ▒     ▒    ▒    ▒
17 ▒     ▒    ▒    ▒
18 ▒     ▒    ▒    ▒
19 ▒     ▒    ▒    ▒
20 ▒     ▒    ▒    ▒
```

AND THIS . .



```
ANY NAME
   D1    D2   V1
1  >     >    >    >
2  ▒     ▒    ▒    ▒
3  ▒     ▒    ▒    ▒
4  ▒     ▒    ▒    ▒
5  ▒     ▒    ▒    ▒
6  ▒     ▒    ▒    ▒
7  ▒     ▒    ▒    ▒
8  ▒     ▒    ▒    ▒
9  ▒     ▒    ▒    ▒
10 ▒1 *DA▒    ▒    ▒
11 ▒     ▒    ▒    ▒
12 ▒     ▒    ▒    ▒
13 ▒     ▒    ▒    ▒
14 ▒     ▒    ▒    ▒
15 ▒     ▒    ▒    ▒
16 ▒     ▒    ▒    ▒
17 ▒3 *DA▒    ▒    ▒
18 ▒     ▒    ▒    ▒
19 ▒     ▒    ▒    ▒
20 ▒     ▒    ▒    ▒
```

EXACTLY THE SAME.

DELETING AND INSERTING BLANKS ON THE SCORE (5)

Even though we now know that the SCORE (5) ignores blanks, your EYE does not!

Before going on, let's clean up the SCORE (5) to present a pleasing visual appearance, and illustrate a command in the process.

> Move the cursor to score line 16 in column D1, ABOVE the entry on score line 17.
>
> Type [D] and watch the screen.
>
> Type [D] three or four times to delete (blanks) and close up the SCORE (5) entries. Careful! Not too many!

The exercise illustrates the DELETE ENTRY (CLOSE UP) command [D]. In this case the "entry" deleted is a blank. See also the DELETE ENTRY (LEAVE BLANK) command [INST DEL] for a different delete procedure.

It is possible to INSERT blanks in the SCORE (5), as well as DELETE them. See the INSERT SPACE AT CURSOR command [I], and the INSERT SPACES ACROSS SCORE command [SHIFT][I].

SECTIONS AND THE SCORE (5)

ENTERING A SECTION HEADING

It is possible to group several Segments in the SCORE (5) into a SECTION. Then this group may be dealt with as though it were a single entity.

> Move the cursor to score line 8, (column D1).
>
> Type [S].
>
> Select a letter from A through M. For this exercise, choose the letter "A."
>
> Type [A], the letter chosen.
>
> Look at the entry on score line 8.
>
> Type [f1] to play the SCORE (5).
>
> The Segments in column D1 of the SCORE (5) will NOT be played now!

The exercise illustrates the ENTER SECTION HEADING command [S] then [A-M] or [A-O].

A Section HEADING creates a DARK SOLID BAR across the SCORE (5) column. The NAME of the Section appears on this solid bar. The characters for the name are displayed in INVERSE--light characters on a dark background.

The LETTER part of a Section NAME in a Section HEADING is provided by you, as shown above.

The NUMBER part of a Section NAME is provided by the computer when you enter a Section HEADING. That number is the number of the COLUMN in which you enter the Section HEADING.

WHEN the SCORE (5) is played, all columns are "read" downward independently. When a Section HEADING is encountered in a column, that column STOPS playing at that score line. The usefulness of this will become apparent later.

In the example above, when you type [f1] to play the SCORE (5), the system looks down each column for an entry to play.

Of course, we have entries only in column D1. And the first entry in column D1 is a Section HEADING, so that column STOPS immediately. We hear nothing from our SCORE (5).

So, why do you make a SECTION HEADING? How do you actually PLAY a SECTION? Read on.

ENTERING A SECTION IN THE SCORE (5) TO PLAY

Move the cursor toward the top of column D1, say to score line 3.

Type [1], the number of times you want the Section to play.

Type [S] for Section.

Type [1] then [A], the Section's NAME.

Type [f1] to play the SCORE (5).

It plays. Let it stop by itself.

Leave the cursor at score line 3.

Type [2].

Type [S].

Type [1] then [A].

Type [F1] to play, and count measures.

Move the cursor to score line 2.

Type [4].

Type [D] then [A], a SEGMENT name.

Type [f1] to play, and count measures.

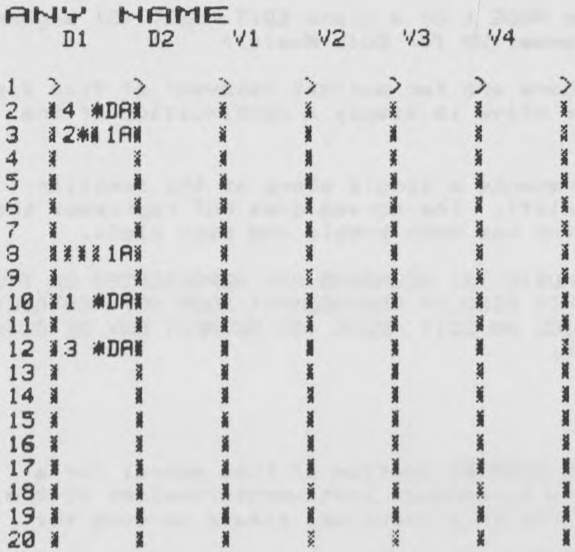
The exercise illustrates the ENTER SECTION TO PLAY command [1-9] then [S] then [1-8] then [A-M] or [A-O].

Yes, now the SCORE (5) plays. It starts at the >>>>>> symbols, and plays the Segment DA four times due to your entry on score line 2.

It plays Section 1A twice, due to your entry on score line 3. This is equivalent to eight plays of DA. By my count, Segment DA gets played a TOTAL of 12 times.

Then column D1 STOPS at the Section HEADING labeled 1A as explained.

Notice the distinctive APPEARANCE of each entry on the SCORE (5):



```
ANY NAME
      D1    D2    V1    V2    V3    V4

 1  >     >     >     >     >     >     >
 2  ▒4 *DA▒     ▒     ▒     ▒     ▒     ▒
 3  ▒2*▒1A▒     ▒     ▒     ▒     ▒     ▒
 4  ▒     ▒     ▒     ▒     ▒     ▒     ▒
 5  ▒     ▒     ▒     ▒     ▒     ▒     ▒
 6  ▒     ▒     ▒     ▒     ▒     ▒     ▒
 7  ▒     ▒     ▒     ▒     ▒     ▒     ▒
 8  ▒▒▒▒1A▒     ▒     ▒     ▒     ▒     ▒
 9  ▒     ▒     ▒     ▒     ▒     ▒     ▒
10  ▒1 *DA▒     ▒     ▒     ▒     ▒     ▒
11  ▒     ▒     ▒     ▒     ▒     ▒     ▒
12  ▒3 *DA▒     ▒     ▒     ▒     ▒     ▒
13  ▒     ▒     ▒     ▒     ▒     ▒     ▒
14  ▒     ▒     ▒     ▒     ▒     ▒     ▒
15  ▒     ▒     ▒     ▒     ▒     ▒     ▒
16  ▒     ▒     ▒     ▒     ▒     ▒     ▒
17  ▒     ▒     ▒     ▒     ▒     ▒     ▒
18  ▒     ▒     ▒     ▒     ▒     ▒     ▒
19  ▒     ▒     ▒     ▒     ▒     ▒     ▒
20  ▒     ▒     ▒     ▒     ▒     ▒     ▒
```

There can be TWO areas on the SCORE (5), defined by YOU: the score lines that actually PLAY Segments and CALL Sections, and the area where the Section HEADINGS and their entries exist.

A SCORE (5) column STOPS playing when it encounters a Section HEADING. This creates a "storage" area on score lines below the Section HEADING for entries that will not be played UNTIL you ENTER A SECTION TO PLAY. SO, a Section may be CALLED to play once, or SEVERAL times during the song. Enter the Section HEADING and its entries ONCE. Play the Section often.

The convention is: put all the Section HEADINGS near one extreme of the 120 SCORE (5) lines or the other.

Playing of the SCORE (5) can be started at ANY score line. The >>>>>> symbols may be moved. See the BEGIN PLAY AT CURSOR (ALL) command [SHIFT][B] for details. See also the BEGIN PLAY AT CURSOR (ONE) command [B].

EDIT MUSIC (3)

Type the [f5] function key to return to the MENU.

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [3] then [RETURN]
SEGMENT NAME?	type [E] then [M] then [RETURN]

The screen shows PAGE 1 of a blank EDIT MUSIC (3) segment named EM. (Remember EM for Edit Music.)

On the screen there are two musical "staves" of five lines each. The lower stave is simply a continuation of the upper stave.

This screen represents a single stave of the familiar TREBLE CLEF (G clef). The screen does NOT represent the Grand Staff, which has both treble and bass clefs.

NOTES FOR EDIT MUSIC (3) SEGMENTS ARE REPRESENTED ON THE TREBLE CLEF. THIS DISPLAY ARRANGEMENT DOES NOT RESTRICT THE RANGE IN WHICH AN EDIT MUSIC (3) SEGMENT MAY BE PLAYED IN THE SCORE (5).

CONNECTIONS

Read the GETTING STARTED section of this manual for a discussion of how to connect instruments/devices to the SONG PRODUCER. For this exercise, please be sure to:

> Connect the MIDI OUT of your instrument to the MIDI IN of the SONG PRODUCER.
>
> Connect the X-OUT MIDI jack on the SONG PRODUCER to the MIDI IN of your instrument.

These connections make this instrument the PROGRAMMING instrument, and Bus X the PLAYBACK bus.

If you have no MIDI keyboard, see the ENTER NOTE/REST (COMPUTER) command [*] etc. in the DICTIONARY OF COMMANDS.

PITCH & DURATION

To an EDIT MUSIC (3) segment, there are only TWO things in the world:

PITCH

DURATION

PITCH is the highness or lowness of a note. Each key on the musical keyboard has a different pitch.

DURATION is how long a note or rest (silence) lasts.

A NOTE has both PITCH and DURATION.

A REST, or silence has only DURATION.

PITCH & DURATION are so important that the computer has two separate cubbyholes, or BUFFERS that remember the PITCH and the DURATION you entered MOST RECENTLY.

The contents of the PITCH BUFFER and the DURATION BUFFER can be changed independently, but each changes only when YOU change it.

Let's put the note MIDDLE C into the PITCH BUFFER:

Play MIDDLE C on the MIDI keyboard.

Let's put the duration of a QUARTER into the DURATION buffer. Since DURATION is expressed in this system in units of a SIXTEENTH, it will take 4 sixteenths to make a quarter. So:

Type [4] on the computer keyboard.

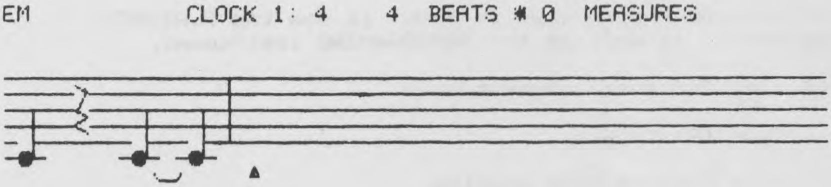
ENTERING NOTES AND RESTS

Type the [RETURN] key. Look at the screen.

Type the [R] key. Look at the screen.

Type the [S] key. Look at the screen.

Type the [RETURN] key.



```
EM            CLOCK 1: 4     4 BEATS * 0  MEASURES
```

The exercise illustrates the ENTER NOTE/REST (MIDI) command etc. See also the SLUR/TIE command [S].

When you type [RETURN], you enter a NOTE.

When you type [R] you enter a REST.

When you type [S] you enter a NOTE with a SLUR/TIE mark.

All entries reflect the CURRENT values stored in the PITCH BUFFER and/or the DURATION BUFFER.

SPECIFYING THE MIDI PLAYBACK BUS/CHANNEL

Now that we have a "musical molecule," the EDIT MUSIC (3) segment EM, let's PLAY it.

Type [P] for Play.

Nothing is heard!

Look at the upper right of the screen. It shows "PLAY MODE."

But nothing is heard!

Type [f3] to STOP "playing."

Look at the upper right of the screen. It shows "EDIT MODE."

There is no real mystery. You MUST tell the system WHICH of its many MIDI buses or channels you would like to use for PLAYBACK of your EDIT MUSIC (3) segments. Let's do so:

Type [M].

The screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
MIDI CHANNEL?	type [X] then [RETURN]

We specify Bus X here, because X-OUT is the MIDI output on the SONG PRODUCER that is connected to the MIDI IN of the PROGRAMMING instrument. We want to PLAYBACK on the SAME instrument that we use to PROGRAM/PLAY notes.

The instrument connected to X-OUT is now the PLAYBACK instrument, as well as the PROGRAMMING instrument.

Lets play our music segment now:

Type [P] to Play.

Type [f3] to STOP playing.

The segment will play repeatedly until you type [f3] to stop playing.

Change the MIDI PROGRAM number (preset) of the PROGRAMMING/PLAYBACK instrument as you wish.

This MIDI PLAYBACK assignment MUST be specified EACH time you FIRST load SONGSTEPPER or MIDI DRUM SONGSTEPPER. Thereafter, this MIDI PLAYBACK assignment will be saved in memory, and can be changed ONLY when you give the MIDI PLAYBACK ASSIGN command [M].

The system does NOT save the MIDI bus/channel PLAYBACK assignment to diskette as part of a song.

For further study, see the MIDI PLAYBACK ASSIGN command [M].

EDIT MUSIC (3) CURSOR CONTROL

The cursor is a small triangle that moves FORWARD automatically to allow entry of the next note/rest.

Some commands, such as the MIDI PLAYBACK ASSIGN command [M], cause the cursor to return to the extreme left of the screen.

Let's move the cursor:

> Type the [SPACE BAR] key until the cursor STOPS.
>
> Look at the screen.
>
> Type and HOLD the [SHIFT] key.
>
> While holding [SHIFT] down, type the [SPACE BAR] until the cursor STOPS.
>
> Look at the screen.
>
> Release ALL keys.
>
> Type the [SPACE BAR] until the cursor STOPS.

The exercise illustrates the CURSOR FORWARD command [SPACE BAR], and the CURSOR BACK command [SHIFT][SPACE BAR].

The cursor will NOT move BACK any further than the beginning of the video PAGE. The cursor will NOT move FORWARD over an empty part of the stave that has no notes or rests.

The cursor moves FORWARD automatically after you enter a note/rest, to allow entry of the NEXT note/rest.

When the cursor reaches the END of a video PAGE it does NOT go FORWARD automatically.

You MUST give a command to go to the next video PAGE. See the GO TO NEXT MUSIC PAGE command [.], and the GO TO PRECEDING MUSIC PAGE command [,].

See also GO TO NEXT DRUM PAGE command [.], and the GO TO PRECEDING DRUM PAGE command [,] for further reference.

OVERWRITING A NOTE/REST

It is possible to replace ANY note/rest in an EDIT MUSIC (3) segment with another note/rest.

> Move the cursor under the LAST note of segment EM.

Play the G above Middle C on the MIDI keyboard.

Type [RETURN].

Type [P] to Play.

Type [f3] to STOP playing.

A note or rest is always entered at the CURRENT cursor position. If there is already a note/rest at that position, that note/rest is OVERWRITTEN (replaced) by the new entry.

As always, the note entered will depend on the contents of the PITCH BUFFER and the DURATION BUFFER. In this example you changed the PITCH BUFFER by playing a note on the MIDI keyboard. You did NOT change the DURATION buffer, which remains a QUARTER of a whole note/rest.

Let's enter some more notes:

Play the A above Middle C on the MIDI keyboard.

Type [2] on the computer keyboard for 2 sixteenths, or EIGHTH note/rest duration.

Type [RETURN]

Play the G above Middle C on MIDI.

Type [RETURN].

Play E above Middle C.

Type [RETURN].

Play Middle C.

Type [RETURN].

Type [P] to Play.

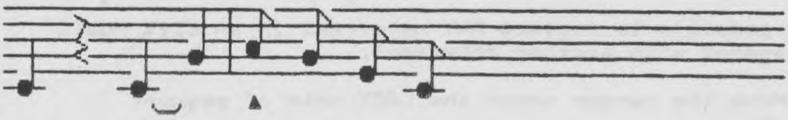
Type [f3] to STOP playing.

INSERT A NOTE/REST

It is possible to INSERT, or add a note/rest WITHIN the segment.

Move the cursor to the position shown:

EM CLOCK 1: 4 4 BEATS * 1 MEASURES



Type [I] for INSERT.

TYPE the number [1] for one sixteenth DURATION.

Type [R] to enter a rest.

Type [I] for INSERT.

PLAY the C one octave LOWER than Middle C on the MIDI keyboard.

Type [S] to enter a note with slur.

Type [I] for INSERT.

PLAY Middle C.

Type [RETURN] to enter a note.

Type [I] for INSERT.

PLAY the D above Middle C.

Type [RETURN].

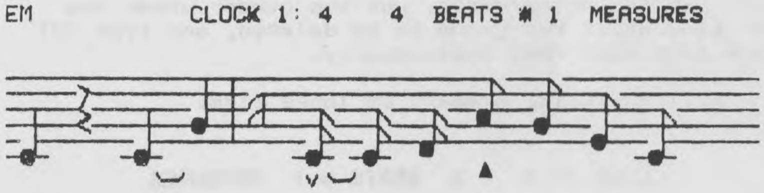
The exercise illustrates the INSERT NOTE/REST (MIDI) command [I] etc. See also the INSERT NOTE/REST (COMPUTER) command [I] etc.

The note/rest is inserted at the CURRENT position of the cursor.

The note/rest originally above the cursor and ALL notes and rests to the RIGHT of the cursor move to the RIGHT to create a space for the INSERTED note/rest.

You MUST type [I] before EACH insertion of a note or rest. Then follow the entry procedure as per normal.

Notice that the cursor remains under the note/rest where it originally stood before the insertions were made:



```
EM          CLOCK 1: 4    4  BEATS # 1  MEASURES
```

The low C appears on the musical staff as Middle C with a "caret" symbol. This symbol indicates that a note SOUNDS one octave lower than depicted on the screen.

You may have noticed that when you type [P] to Play, the system repeats EXACTLY what is on screen. Odd signatures or incomplete measures are allowed! What you see is what you get.

DELETING A NOTE/REST

First, let's complete our EDIT MUSIC (3) segment EM, and enter a few notes and rests we DON'T want!

> Type and HOLD the [SPACE BAR] until the cursor STOPS.
>
> Type [4].
>
> Play the G below Middle C on the MIDI keyboard.
>
> Type [RETURN].
>
> Type [P] to Play.
>
> Type [f3] to STOP playing.
>
> Type [R].
>
> Type [RETURN]
>
> Type [S].

Now our EDIT MUSIC segment EM has TWO complete measures (marked by vertical BAR lines). But there are extra notes and a rest we don't want! It is possible to DELETE, or remove, the note/rest at the CURRENT cursor position:

> Move the cursor BACK under the rest after the SECOND bar line, to the beginning of what would be the third measure.
>
> Look at the screen.
>
> Type [D] three times.

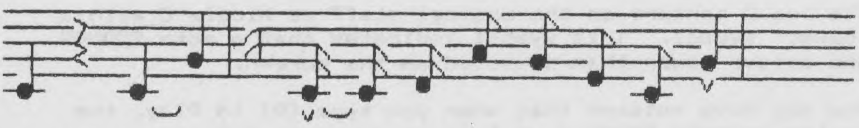
The exercise illustrates the DELETE NOTE/REST command [D].

The note/rest at the CURRENT cursor position is deleted. Everything to the RIGHT of the cursor shifts to the LEFT to fill the gap, as a note/rest is deleted.

To delete SEVERAL notes/rests, put the cursor under the LEFTMOST element of the group to be deleted, and type [D] to delete each note/rest individually.

Now, our EDIT MUSIC (3) segment EM looks like:

```
EM              CLOCK 1: 4    4  BEATS * 1  MEASURES
```



Correct your version of EM if necessary.

PLAY AN EDIT MUSIC (3) SEGMENT ON THE SCORE (5)

YOU MAY CHOOSE TO ENTER ON THE SCORE (5), ANY OR ALL OF THE EDIT MUSIC (3) SEGMENTS YOU HAVE PROGRAMMED.

Type the [f5] function key to go to the MENU.

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [5] then [RETURN]

ENTERING AN EDIT MUSIC (3) SEGMENT ON THE SCORE (5)

Move the cursor to column V1.

Move the cursor to score line 15.

Type the number [1].

Type [C] for TRANSPOSE letter.

Type [E] then [M], the segment NAME.

Type the [f1] function key to Play.

The EDIT MUSIC (3) segment is not heard!

Type [f3] to STOP playing.

There is little mystery.

You have told the SCORE (5) that you want V1 (VOICE 1) to play EDIT MUSIC (3) segment EM.

But, you haven't specified TWO other things:

FIRST, the system does NOT know which MIDI PROGRAM number--which preset sound--you intend this Voice to play.

Remember, any EDIT MUSIC (3) segment knows ONLY about PITCH and DURATION.

You exercise exact control over TIMBRE, or tone color, of a voice by typing a MIDI PROGRAM number. This number is part of a MIDI PROGRAM BUS/VOICE entry in the SCORE (5).

So, the first unanswered question is, ". . which sound do you want the selected instrument to choose?"

SECOND, you have NOT told the system which INSTRUMENT shall do the playing.

This is done by specifying a SONG PRODUCER MIDI bus or channel by typing a letter or number.

For instance, if you specify bus X, then the instrument whose MIDI IN is connected to X-OUT will play the voice.

Let's make this selection/assignment:

THE MIDI PROGRAM BUS/VOICE ASSIGNMENT

Move the cursor above the entry in column V1, to score line 14.

Type [M] for MIDI.

Type [1] then [6] for the MIDI PROGRAM number selection.

Type [X] for the SONG PRODUCER BUS assignment.

Now type [f1] to play.

Voice 1 (Segment EM) plays on instrument X (once, as programmed).

Type [f3] to STOP playing.

This exercise illustrates the MIDI PROGRAM BUS/VOICE ON command [M] etc.

In this exercise, you may replace the PROGRAM number "16" entered above with any MIDI PROGRAM number that you know sounds good on the instrument connected to X-OUT, or the X bus. A bass sound is intended.

You MUST type a "leading" zero before any single digit MIDI PROGRAM number specified. For example type [0] then [7], not simply [7].

Bus X was specified above because it is certain that you have an instrument connected to X-OUT. Be sure to see the MIDI PROGRAM BUS/VOICE ON command for details on how to "double" a musical line using two SCORE (5) voices, etc.

The exercise above causes the instrument connected to X-OUT to select "16" as its MIDI PROGRAM number, or preset. This "X" instrument may then play Voice 1 of the SCORE (5) starting from the)))))) symbols when the SCORE (5) is played. This voice V1 currently contains ONE play of segment EM, so that's all you hear.

EACH VOICE V1-V8 IN THE SCORE (5) MUST HAVE A MIDI PROGRAM BUS/VOICE ASSIGNMENT IF ENTRIES PLACED IN THAT VOICE ARE TO BE HEARD.

The voice tracks V1-V8 allow the same ability to repeat segments and create Section HEADINGS as do the drum tracks D1 and D2 (previously demonstrated).

Let's try something else:

USING TRANSPOSE (2) LETTERS

A TRANSPOSE (2) segment is named using a SINGLE letter.

A TRANSPOSE (2) segment is NOT played by the SCORE (5).

Rather, the NAME, or single letter, of a TRANSPOSE (2) segment is associated with an EDIT MUSIC (3) or RECORD MUSIC (4) segment that IS entered on the SCORE (5).

In fact, NO EDIT MUSIC (3) or RECORD MUSIC (4) segment MAY be entered without being preceded by such a TRANSPOSE letter.

The TRANSPOSE (2) segment "transposes," or uniformly raises or lowers all pitches in the associated MUSIC (3) or (4) segment.

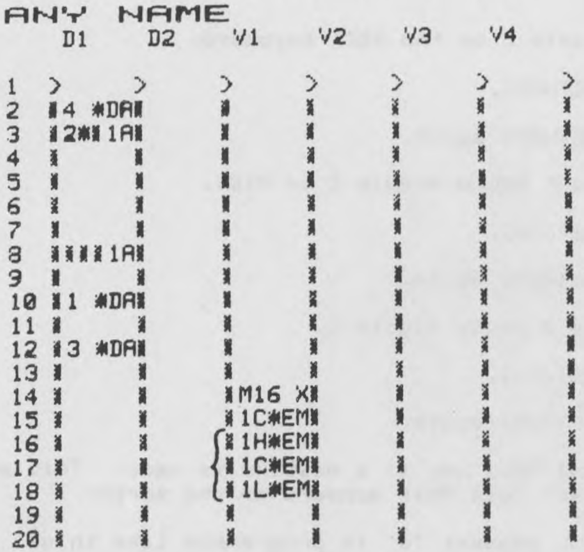
Several TRANSPOSE (2) segments have been preprogrammed for your immediate use. They are:

C - makes NO transposition

H - transposes UP ONE OCTAVE

L - transposes DOWN ONE OCTAVE

Add the following entries to your SCORE (5):



```
ANY NAME
    D1     D2     V1     V2     V3     V4

 1 >      >      >      >      >      >      >
 2 ▒4 *DA▒      ▒      ▒      ▒      ▒      ▒
 3 ▒2*▒1A▒      ▒      ▒      ▒      ▒      ▒
 4 ▒      ▒      ▒      ▒      ▒      ▒      ▒
 5 ▒      ▒      ▒      ▒      ▒      ▒      ▒
 6 ▒      ▒      ▒      ▒      ▒      ▒      ▒
 7 ▒      ▒      ▒      ▒      ▒      ▒      ▒
 8 ▒▒▒▒1A▒      ▒      ▒      ▒      ▒      ▒
 9 ▒      ▒      ▒      ▒      ▒      ▒      ▒
10 ▒1 *DA▒      ▒      ▒      ▒      ▒      ▒
11 ▒      ▒      ▒      ▒      ▒      ▒      ▒
12 ▒3 *DA▒      ▒      ▒      ▒      ▒      ▒
13 ▒      ▒      ▒      ▒      ▒      ▒      ▒
14 ▒      ▒      ▒M16 X▒      ▒      ▒      ▒
15 ▒      ▒      ▒1C*EM▒      ▒      ▒      ▒
16 ▒      ▒     {▒1H*EM▒      ▒      ▒      ▒
17 ▒      ▒     {▒1C*EM▒      ▒      ▒      ▒
18 ▒      ▒     {▒1L*EM▒      ▒      ▒      ▒
19 ▒      ▒      ▒      ▒      ▒      ▒      ▒
20 ▒      ▒      ▒      ▒      ▒      ▒      ▒
```

Type [f1] to Play.

Look at the screen.

Listen carefully and "read" segments in V1 as they play.

When the music portion stops, type [f3].

TRANSPOSE (2)

PROGRAMMING A TRANSPOSE (2) SEGMENT

First, let's start from scratch by wiping the V1 column on the SCORE (5) clean.

Move the cursor to column V1.

Move the cursor to score line 18.

Type the [D] key FIVE TIMES.

Now, let's program a TRANSPOSE (2) segment:

Type [f5] to go to the MENU.

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [2] then [RETURN]
TRANSPOSE NAME?	type [B] then [RETURN]

Play Middle C on the MIDI keyboard.

Type [RETURN].

Type [RETURN] again.

Play the F BELOW Middle C on MIDI.

Type [RETURN].

Type [RETURN] again.

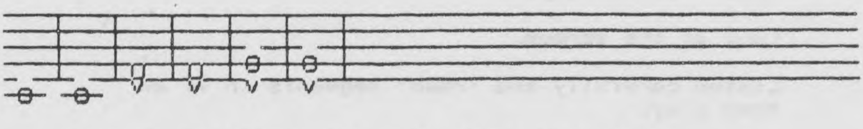
Play the G BELOW Middle C.

Type [RETURN].

Type [RETURN] again.

Type the [INST DEL] key if a mistake is made. This will delete the LAST note that appears on the screen.

When TRANSPOSE segment "B" is programmed like this:



Type the [f5] key to go to the MENU. This action also SAVES TRANSPOSE segment B in memory.

The exercise illustrates the ENTER TRANSPOSE NOTE (MIDI) command etc.

See ESPECIALLY the ENTER TRANSPOSE NOTE (COMPUTER) command [*] etc. for a discussion of uses of the TRANSPOSE (2) segment.

The exercise also may illustrate the DELETE TRANSPOSE NOTE command [INST DEL].

HEARING TRANSPOSE B AT WORK

(Type [f5] to go to the MENU.)

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [5] then [RETURN]

Move the cursor to column V1.

Move the cursor to score line 2.

Type [M] for MIDI.

Type [1] then [6] for PROGRAM number.

Type [X] for bus X.

Move the cursor to score line 3.

Type [1].

Type [B] for TRANSPOSE B.

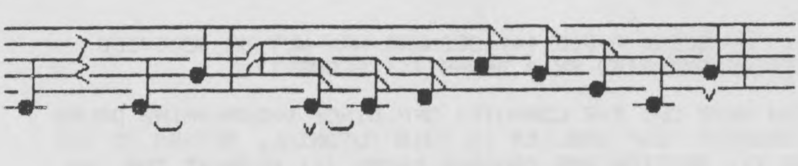
Type [E] then [M] for segment EM.

Type [f1] to Play.

Lay back and listen.

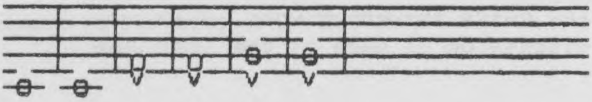
Perhaps it would be helpful to recall that EDIT MUSIC (3) segment EM comprises TWO measures:

EM CLOCK 1: 4 4 BEATS * 2 MEASURES



And . . . .

TRANSPOSE B has SIX notes:



EACH NOTE of a TRANSPOSE (2) segment causes ONE play of the entire EDIT MUSIC (3) or RECORD MUSIC (4) segment it is associated with on the SCORE (5).

The representation of notes within a TRANSPOSE (2) segment as WHOLE notes has NO BEARING on the INTERNAL timing or rhythmic structure of any EDIT MUSIC (3) or RECORD MUSIC (4) segment named in the SCORE (5).

EACH whole note in a TRANSPOSE (2) segment is merely shorthand that says ". . .play the associated EDIT MUSIC (3) or RECORD MUSIC (4) segment ONCE".

If there are SIX notes in a TRANSPOSE (2) segment, it will play the EDIT MUSIC (3) or RECORD MUSIC (4) segment you associate with it, SIX times. Six times, regardless of how many measures the EDIT MUSIC (3) or RECORD MUSIC (4) segment may have, or what the time signature of the EDIT MUSIC (3) or RECORD MUSIC (4) segment is.

The INTERVAL of transposition FOR EACH PLAY is determined by YOU, by your programming of the associated TRANSPOSE (2) segment notes RELATIVE TO MIDDLE C.

MIDDLE C causes NO transposition. Other TRANSPOSE notes will transpose an associated EDIT MUSIC (3) or RECORD MUSIC (4) segment named in the SCORE (5) by the interval of the TRANSPOSE (2) note relative to Middle C.

So, SIX transpose notes times TWO measures of MUSIC equals TWELVE measures played on the SCORE (5). And that is what you heard.

RECORD MUSIC (4)

By now, you are thoroughly convinced that you can produce a much better riff than the one we just created. And you're right!

Why don't you just PLAY a two measure bass line?

OK. Let's make a RECORD MUSIC (4) segment, and call it "RM."

NOTE: A RECORD MUSIC (4) SEGMENT MAY NOT BE RECORDED UNLESS ACCOMPANIED BY A DRUMS (1) SEGMENT!

IF YOU HAVE CUT THE COMPUTER OFF SINCE PROGRAMMING DRUMS (1) SEGMENT "DA" EARLIER IN THIS TUTORIAL, RETURN TO THE DRUMS (1) SECTION AND PROGRAM DRUMS (1) SEGMENT "DA" AS PRESCRIBED. THEN RETURN HERE AND CONTINUE.

ANSWERING THE PROMPTS FOR RECORD MUSIC (4) RECORDING

Type [f5] to go to the MENU.

SCREEN PROMPTS:	YOUR RESPONSE:
YOUR CHOICE?	type [4] then [RETURN]
SEGMENT NAME?	type [R] then [M] then [RETURN]
WHICH DRUM SEGMENT?	type [D] then [A] then [RETURN]
HOW MANY DRUM SEGMENTS LONG?	type [2] then [RETURN]
RELATIVE TO SEGMENT CLOCK 1:1 BEATS/MEASURE IS?	type [1] then [6] then [RETURN]

The screen will display most of the choices you made to satisfy the PROMPTS above.

If you are not sure that all PROMPTS above were answered correctly, or IF YOU WISH TO CHANGE THE TIMING CONDITIONS FOR THE RECORDING OF A RECORD MUSIC PROMPT, give the TIMING A SEGMENT command [T]. (Simply type [T] and answer the PROMPTS that appear).

See the TIMING A SEGMENT command [T].

GETTING READY

When you start the recording process, the system will accompany your performance with the DRUMS (1) segment, DA in this example.

The system will play the DRUMS (1) segment ONCE to cue your performance. No recording takes place during this preparatory "one segment for nothing" period.

Then the system will record the MONOPHONIC LINE you PLAY on the MIDI keyboard whose MIDI OUT is connected to the MIDI IN of the SONG PRODUCER. This version of SONGSTEPPER and MIDI DRUM SONGSTEPPER software does not record pitch bending and modulation changes.

Your performance will be accompanied by the DRUMS (1) segment selected, DA.

THE PLAYING SPAN ON THE MIDI KEYBOARD FOR A RECORD MUSIC (4) RECORDING IS FROM THE "C" TWO OCTAVES BELOW MIDDLE C TO THE "B" THREE OCTAVES ABOVE MIDDLE C.

STARTING THE RECORDING

You START the recording process by TAPPING the [SPACE BAR]. You may STOP & ERASE by TAPPING the [SPACE BAR].

You may rerecord as many times as you like by simply starting again. See the RECORD MUSIC (START) command [SPACE BAR], and the RECORD MUSIC (STOP & ERASE) command [SPACE BAR].

ENDING THE RECORDING

The system AUTOMATICALLY ENDS the recording for you. Tap the [SPACE BAR] only when you make a mistake and wish to STOP & ERASE. Then you MUST tap the [SPACE BAR] if you wish to record again.

The LENGTH of the recording is determined by your answers to the WHICH DRUM SEGMENT? and HOW MANY DRUM SEGMENTS LONG? prompts.

That is, if you answer "DA," and "[2]," as in this example, the RECORD MUSIC (3) segment RM will be as long as TWO plays of DRUMS (1) segment DA.

[SPACE BAR] TECHNIQUE

It is important that you TAP the [SPACE BAR], NOT hold it down. This key features "key-repeat." If you hold it down it will START/STOP/START/STOP etc. the system.

For this exercise, play something in the key of C. (It will fit with segment EM then).

REMEMBER, ONE SEGMENT OF DRUMS FOR NOTHING, AND THEN PLAY.

Tap the [SPACE BAR].

Listen as DA plays ONCE.

Then play it!

Let the recording END automatically (do nothing).

OR tap the [SPACE BAR] at any time to STOP & ERASE.

Tap the [SPACE BAR] again to start again.

When you are satisfied, allow the system to END recording (do nothing).

Type [P] to Play.

Type [f3] to STOP playing.

The system will NOT playback a "recording" that YOU stop using the [SPACE BAR]. If YOU STOP, YOU ERASE.

See also the AUTOCORRECT command [A] and the EDIT RECORD MUSIC command [E].

IMPORTANCE OF MIDI PLAYBACK ASSIGNMENT

You previously gave the MIDI PLAYBACK ASSIGN command [M] before playing EDIT MUSIC (3) segment "EM."

IF YOU HAVE CUT THE COMPUTER OFF SINCE THEN, YOU MUST GIVE THE MIDI PLAYBACK ASSIGN COMMAND [M] BEFORE RECORD MUSIC (4) SEGMENT "RM" MAY BE PLAYED.

SEE page SSI-14.0 in this tutorial, or the MIDI PLAYBACK ASSIGN command [M] in the SONGSTEPPER DICTIONARY OF COMMANDS if necessary.

ENTERING A RECORD MUSIC (4) SEGMENT ON THE SCORE (5)

Live a little. Bypass the MENU.

Type [f7] to go DIRECTLY to the SCORE (5).

Move the cursor to column V2.

Move to score line 2.

Type [M].

Type [1] then [6].

Type [X].

Move the cursor to score line 3.

Type [1].

Type [B].

Type [R] then [M].

Type [f1] to Play.

Let it go.

See the GO TO SCORE/SEGMENT command [f7] concerning bypassing the MENU.

EXPERIMENT!

If you have the MIDI IN of a second instrument attached to Y-OUT, change "M16 X" in the SCORE (5) to say, "M20 Y." Experiment!

Remember, the two digit number is the MIDI PROGRAM number, the sound. The bus letter determines where a voice is routed, e.g. Y-OUT.

Review by reading the MENU MODES entry in the DICTIONARY OF COMMANDS.

TEMPO (MASTER)

Type [f1] to Play your song.

Type [f3] to STOP.

Type [SHIFT][T].

Type [1] then [.] then [5]

Type [RETURN].

Type [f1] to Play.

Type [f3] to STOP.

The exercise illustrates the TEMPO (MASTER) command [SHIFT][T]. See it!

We now present for your edification and consternation the SCORE (5) of a short tune that works.

Look at the entries. Read, read, read the DICTIONARY OF COMMANDS.

THIS ENDS THE INTRODUCTION TO SONGSTEPPER & MIDI DRUM SONGSTEPPER. HAPPY SONG PRODUCING!

```
TOM4
    D1    D2    V1    V2    V3    V4    V5    V6    V7    V8

1  ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
2  ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
3  >     >3 *AA>M11 X>M11 Y>M51 Z>M51 W>     >     >     >     ▮
4  ▮     ▮     ▮3D*P1▮3D*P1▮3C*B8▮3C*B9▮     ▮     ▮     ▮     ▮
5  ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
6  ▮     ▮     ▮M51 X▮M51 Y▮M11 Z▮M11 W▮     ▮     ▮     ▮     ▮
7  ▮     ▮1 *AB▮1D*P3▮1D*P2▮1D*P4▮1D*P2▮     ▮     ▮     ▮     ▮
8  ▮     ▮     ▮M11 X▮M11 Y▮     ▮     ▮     ▮     ▮     ▮     ▮
9  ▮     ▮3 *AB▮4C*MA▮1C*R4▮4C*MD▮1C*MZ▮     ▮     ▮     ▮     ▮
10 ▮     ▮1 *A3▮     ▮     ▮     ▮M07 W▮     ▮     ▮     ▮     ▮
11 ▮     ▮3*▮2A▮     ▮1C*MB▮     ▮2I*B1▮     ▮     ▮     ▮     ▮
12 ▮     ▮     ▮     ▮2*▮2B▮     ▮M51 W▮     ▮     ▮     ▮     ▮
13 ▮     ▮     ▮     ▮     ▮     ▮1C*B1▮     ▮     ▮     ▮     ▮
14 ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
15 ▮     ▮     ▮M11 X▮M11 Y▮M11 W▮M51 Z▮     ▮     ▮     ▮     ▮
16 ▮     ▮1 *A2▮2D*D1▮2E*D1▮2D*Q1▮4C*D4▮     ▮     ▮     ▮     ▮
17 ▮     ▮1 *A2▮1D*D1▮1E*D1▮1D*Q1▮1C*D4▮     ▮     ▮     ▮     ▮
18 ▮     ▮1 *A4▮     ▮     ▮     ▮1C*R5▮     ▮     ▮     ▮     ▮
19 ▮     ▮     ▮     ▮     ▮OFF W▮OFF Z▮     ▮     ▮     ▮     ▮
20 ▮     ▮1*▮2D▮1*▮1C▮1*▮2C▮1*▮3C▮1*▮4C▮     ▮     ▮     ▮     ▮
21 ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
22 ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
23 ▮     ▮▮▮▮2A▮     ▮▮▮▮2B▮     ▮     ▮     ▮     ▮     ▮     ▮
24 ▮     ▮4 *A1▮     ▮M47 Y▮     ▮     ▮     ▮     ▮     ▮     ▮
25 ▮     ▮     ▮     ▮4C*P1▮     ▮     ▮     ▮     ▮     ▮     ▮
26 ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
27 ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
28 ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮     ▮
```

SONGSTEPPER
MAIN MENU MODES

MODE	USAGE	REFERENCE
(1) Drums	Step-time drum segments: programming, playback or editing. Songstepper for drum trigger outputs or midi drum songstepper for midi bus w-out, midi trigger outputs.	DOC-70.0
(2) Transpose	Transposes edit music (3) segments or record music (4) segments.	DOC-74.0
(3) Edit Music	Step-time music segments: recording, playback or editing.	DOC 70.0
(4) Record Music	Real-time music segments: recording, playback, autocorrecting and editing of autocorrected record music segments.	DOC-70.0
(5) Score	Displays 20 lines of the score.	DOC-75.0
(6) Load	Loads a song from diskette.	DOC-76.0
(7) Save	Saves your current song to diskette.	DOC-77.0
(8) New Title	Re-name your current song.	DOC-79.0
(9) Define Sync	Defines clock in/out.	DOC-80.0

SONGSTEPPER DICTIONARY OF COMMANDS

SONGSTEPPER - DRUMS MODE (1) COMMANDS

FUNCTION	COMMAND	REFERENCE
"AT" DRUM TRACK	[@] (MIDI DRUM SONGSTEPPER)	DOC- 5.0
Allows access to 'DRUM' and/or alternate 'PERCUSSION' sounds.		
CHANGE SEGMENT NAME	[C]	DOC-14.0
CLEAR (ERASE) SEGMENT	[SHIFT][CLR HOME]	DOC-15.0
COPY TO NEW SEGMENT	[=]	DOC-16.0
CURSOR BACK	[SHIFT][SPACE BAR]	DOC-23.0
CURSOR FORWARD	[SPACE BAR]	DOC-24.0
CURSOR HOME (TOP-LEFT OF PAGE 1)	[CLR HOME]	DOC-25.0
DELETE ALL DRUMS ABOVE CURSOR	[INST DEL]	DOC-28.0
DELETE END DRUM SEGMENT MARKER	[SHIFT][E] (AT THE CURSOR)	DOC-37.0
DELETE DRUM NUMBER ABOVE CURSOR	[D] or [0]	DOC-29.0
THEN	[1-8]	
DISPLAY ALL SEGMENT HEADINGS	[H]	DOC-62.0
END DRUM SEGMENT (AT THE CURSOR)	[E]	DOC-37.0
Erases all DRUM ENTRIES to the right of the cursor.		
ENTER DRUM NUMBER	[1-8]	DOC-39.0
GO TO ANY SEGMENT (MODE 1,3 OR 4)	[N] or [SHIFT][N]	DOC-89.0
THEN	[--] (SEGMENT HEADING)	
GO TO NEXT PAGE	[.>]	DOC-60.0
GO TO PREVIOUS PAGE	[,<]	DOC-60.0
GO TO PAGE 1 (CURSOR HOME)	[CLR HOME]	DOC-25.0
GO TO MENU (SONG STEPPER)	[f5]	DOC-61.0
GO TO SCORE/SEGMENT	[f7]	DOC-61.0
Alternates between DRUM SEGMENT and SCORE.		
HEADINGS, DISPLAY (TO VIDEO)	[H]	DOC-62.0
HEADINGS, PRINT (TO PRINTER)	[SHIFT][H]	DOC-64.0
MIDI DRUMS ASSIGNMENT	[M] (MIDI DRUM SONGSTEPPER)	DOC-84.0
NAME NEW DRUM SEGMENT	[N] (SEE BELOW)	DOC-88.0
NEW MUSIC SEGMENT	[SHIFT][N]	DOC-89.0
Creates a NEW SEGMENT of the last used MUSIC MODE, MODE (3) OR MODE (4).		
PLAY SCORE	[f1]	DOC-91.0
PLAY SEGMENT	[P]	DOC-92.0
PRINT ALL SEGMENT PAGES	[SHIFT][£]	DOC-92.0
PRINT CURRENT SEGMENT PAGE	[£]	DOC-93.0
PRINT ALL SEGMENT HEADINGS	[SHIFT][H]	DOC-64.0
RESET	[RUN STOP][RESTORE]	DOC-96.0
STOP PLAYING	[f3]	DOC-97.0
TEMPO (MASTER)	[SHIFT][T]	DOC-98.0
TIMIMG (SEGMENT)	[T]	DOC-99.0

DRUM SEGMENTS ARE LIMITED TO 240 COLUMNS. SEE MENU MODES DOC-70.0
USE THE COMMENT FIELD IN NEW SEGMENT NAMES. SEE HEADINGS DOC-62.0
A maximum of 8 characters is allowed for the COMMENT FIELD.

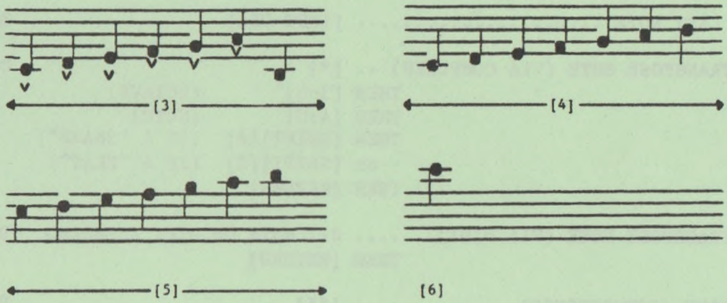
SONGSTEPPER - TRANSPOSE MODE (2) COMMANDS

FUNCTION	COMMAND		REFERENCE
DELETE LAST NOTE	[INST DEL]		DOC-33.0
ENTER TRANSPOSE NOTE (VIA COMPUTER)	[*]		DOC-52.0
	THEN [3-5]	(OCTAVE)	
	THEN [A-G]	(NOTE)	
	THEN [SHIFT][#]	(IF A "SHARP")	
	or [SHIFT][%]	(IF A "FLAT")	
	THEN [RETURN]		
ENTER TRANSPOSE NOTE (VIA MIDI)	HIT NOTE ON MIDI KEYBOARD		DOC-57.0
	THEN [RETURN]		
GO TO MENU (SONGSTEPPER)	[f5]		DOC-61.0
GO TO TRANSPOSE MUSIC SEGMENT	[N]		DOC-88.0
NAME NEW TRANSPOSE MUSIC SEGMENT	[N]		DOC-88.0
	THEN [A-M] (A ONE LETTER NAME)		DOC-74.0
RESET	[RUN STOP][RESTORE]		DOC-96.0

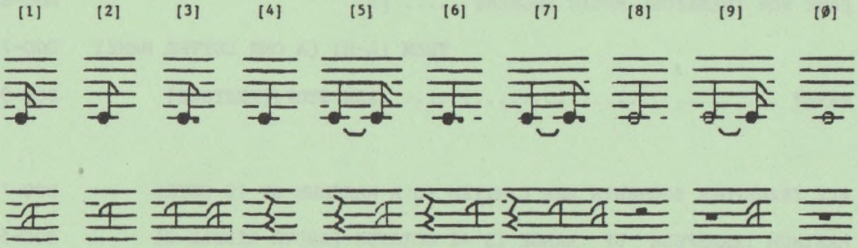
ALL TRANSPOSE SEGMENTS ARE LIMITED TO A MAXIMUM OF 12 NOTES	DOC-75.0
MAXIMUM TRANSPOSE UP RANGE IS +2 OCTAVES (ABOVE MIDDLE C)	DOC-52.0
MAXIMUM TRANSPOSE DOWN RANGE IS -1 OCTAVE (BELOW MIDDLE C)	DOC-52.0

STAFF MNEMONICS

OCTAVE NUMBERS



NOTE DURATION


[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]
[9]
[0]

REST DURATION

SONGSTEPPER - EDIT MUSIC MODE (3) COMMANDS

FUNCTION	COMMAND	REFERENCE
CHANGE SEGMENT NAME	[C]	DOC-14.0
CLEAR (ERASE) SEGMENT	[SHIFT][CLR HOME]	DOC-15.0
COPY TO NEW SEGMENT	[=]	DOC-16.0
CURSOR ALIGN PAGE	[SHIFT][>]	DOC-22.0
Causes the VIDEO PAGE to START at the CURSOR.		
CURSOR BACK	[SHIFT][SPACE BAR]	DOC-23.0
CURSOR FORWARD	[SPACE BAR]	DOC-24.0
CURSOR HOME (TOP-LEFT OF PAGE 1)	[CLR HOME]	DOC-25.0
DELETE NOTE/REST (AT CURSOR)	[D]	DOC-32.0
DISPLAY "FLATS"	[SHIFT][%]	DOC-34.0
DISPLAY "SHARPS"	[SHIFT][#]	DOC-34.0
DISPLAY ALL SEGMENT HEADINGS	[H]	DOC-62.0
ENTER NOTE (VIA COMPUTER)	[*]	DOC-40.0
THEN	[3-5] (OCTAVE)	
THEN	[A-G] (NOTE)	
THEN	[SHIFT][#] (IF A "SHARP")	
or	[SHIFT][%] (IF A "FLAT")	
THEN	[1-9-0] (DURATION IN 16th's)	
THEN	[RETURN]	
ENTER NOTE (VIA MIDI)	HIT NOTE ON MIDI KEYBOARD	DOC-43.0
TYPE	[1-9-0] (DURATION IN 16th's)	
THEN	[RETURN]	
ENTER REST	[1-9-0] (IN 16th's)	DOC-46.0
THEN	[R]	
GO TO ANY SEGMENT (MODE 1,3 OR 4)	[N] or [SHIFT][N]	DOC-89.0
THEN	[--] (SEGMENT HEADING)	
GO TO NEXT PAGE	[.]	DOC-60.0
GO TO PREVIOUS PAGE	[,]	DOC-61.0
GO TO PAGE 1 (CURSOR HOME)	[CLR HOME]	DOC-25.0
GO TO MENU (SONG STEPPER)	[f5]	DOC-61.0
GO TO SCORE/SEGMENT	[f7]	DOC-61.0
Aternates between EDIT MUSIC SEGMENT and SCORE.		
HEADINGS, DISPLAY ON VIDEO	[H]	DOC-62.0
HEADINGS, PRINT	[SHIFT][H]	DOC-64.0
INSERT NOTE/REST (AT CURSOR)	[I]	DOC-65.0
Then follow 'ENTER NOTE' or 'ENTER REST' above.		
MIDI PLAYBACK ASSIGNMENT	[M]	DOC-87.0
THEN	[W-Z] (MIDI BUS)	
or	[2-9] (MIDI CHANNEL OF Z-OUT)	
NAME NEW EDIT MUSIC SEGMENT	[N] (120 EVENTS MAXIMUM)	DOC-88.0
NEW DRUMS SEGMENT	[SHIFT][N]	DOC-89.0
PLAY SCORE	[f1]	DOC-91.0
PLAY SEGMENT	[P]	DOC-92.0
PRINT ALL SEGMENT PAGES	[SHIFT][£]	DOC-92.0
PRINT CURRENT SEGMENT PAGE	[£]	DOC-93.0
PRINT ALL SEGMENT HEADINGS	[SHIFT][H]	DOC-64.0
REPLACE NOTE (VIA COMPUTER)	FOLLOW 'ENTER NOTE' ABOVE,	DOC-95.0
BUT SKIP THE DURATION PROMPT. TYPE	[↑] INSTEAD OF [RETURN].	
REPLACE NOTE (VIA MIDI)	HIT NOTE ON MIDI KEYBOARD	DOC-95.0
THEN	[↑]	
RESET	[RUN STOP][RESTORE]	DOC-96.0
SLUR (TIED NOTES)	FOLLOW 'ENTER NOTE' ABOVE,	DOC-97.0
BUT TYPE	[S] RATHER THAN [RETURN].	
STOP PLAYING (OR TUNING, DOC-109.0)...	[f3]	DOC-97.0
TEMPO (MASTER)	[SHIFT][T]	DOC-98.0
TIMING (SEGMENT)	[T]	DOC-99.0
TUNING	[←]	DOC-109.

MUSIC SEGMENTS ARE LIMITED TO 120 EVENTS. SEE MENU MODES DOC-70.0
USE THE COMMENT FIELD FOR NEW SEGMENT NAMES. SEE HEADINGS DOC-62.0
A maximum of 8 characters is allowed for the COMMENT FIELD.

SONGSTEPPER - RECORD MUSIC MODE (4) COMMANDS

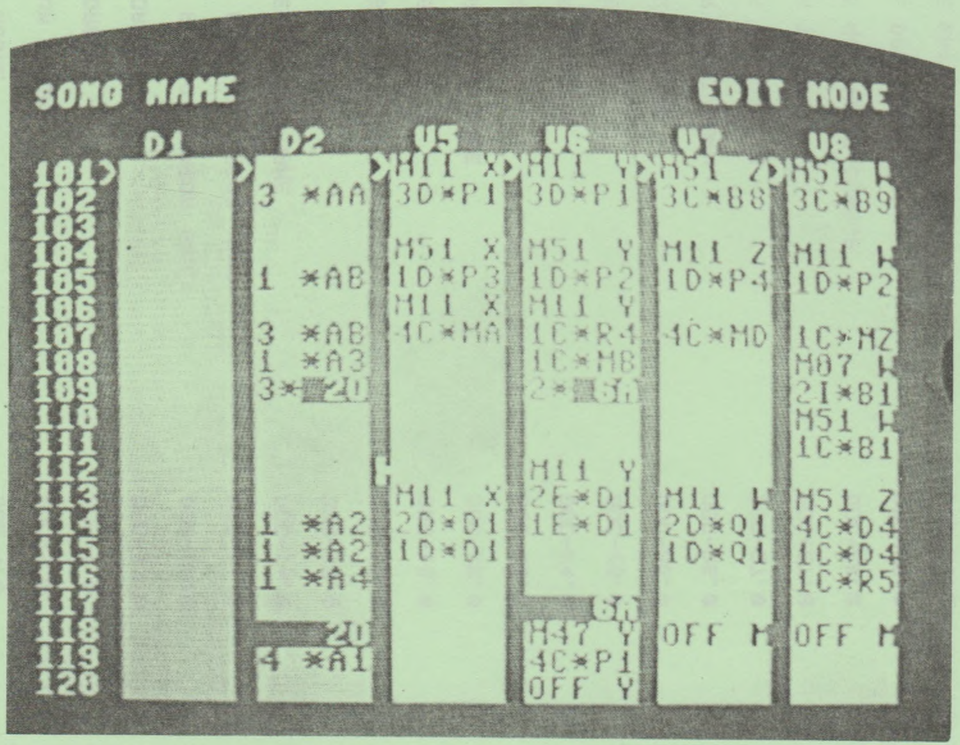
FUNCTION	COMMAND	REFERENCE
AUTOCORRECT	[A]	DOC- 9.0
THEN	[1-16] (AUTOCORRECT NUMBER)	
The AUTOCORRECT NUMBER is in units of 64th notes.		
AUTOCORRECT OFF	[SHIFT][A]	DOC-13.0
CHANGE SEGMENT NAME	[C]	DOC-14.0
CLEAR SEGMENT	[SHIFT][CLR HOME]	DOC-15.0
COPY TO NEW SEGMENT	[=]	DOC-16.0
DISPLAY ALL SEGMENT HEADINGS	[H]	DOC-61.0
EDIT (AUTOCORRECTED) RECORD MUSIC	[E]	DOC-11.0
GO TO ANY SEGMENT (MODE 1,3 OR 4)	[N] or [SHIFT][N]	DOC-89.0
THEN	[--] (SEGMENT HEADING)	
GO TO MENU (SONG STEPPER)	[f5]	DOC-61.0
GO TO SCORE/SEGMENT	[f7]	DOC-61.0
Alternates between RECORD MUSIC SEGMENT and SCORE.		
HEADINGS, DISPLAY ON VIDEO	[H]	DOC-62.0
HEADINGS, PRINT TO PRINTER	[SHIFT][H]	DOC-64.0
MIDI PLAYBACK ASSIGNMENT	[M]	DOC-87.0
THEN	[W-Z] (MIDI BUS)	
or	[2-9] (MIDI CHANNEL OF Z-OUT)	
NAME NEW RECORD MUSIC SEGMENT	[N] (SEE BELOW)	DOC-88.0
NEW DRUMS SEGMENT	[SHIFT][N]	DOC-89.0
PLAY SCORE	[f1]	DOC-91.0
PLAY SEGMENT	[P]	DOC-92.0
PRINT ALL SEGMENT HEADINGS	[SHIFT][H]	DOC-64.0
START RECORDING (AND ERASE OLD) ...TAP	[SPACE BAR]	DOC-93.0
You must let the computer STOP the recording!		
STOP RECORDING (AND ERASE OLD) ....TAP	[SPACE BAR]	DOC-94.0
STOP PLAYING (AND TUNING, DOC-109)	[f3]	DOC-97.0
TEMPO (MASTER)	[SHIFT][T]	DOC-98.0
TIMING (SEGMENT)	[T]	DOC-106.
TUNING	[←]	DOC-109.
RESET	[RUN STOP][RESTORE]	DOC-96.0

MUSIC SEGMENTS ARE LIMITED TO 120 EVENTS. SEE MENU MODES DOC-70.0
USE THE COMMENT FIELD FOR NEW SEGMENT NAMES. SEE HEADINGS DOC-62.0
A maximum of 8 characters is allowed for the COMMENT FIELD.

SONGSTEPPER - SCORE MODE (5) COMMANDS

FUNCTION	COMMAND	REFERENCE
ALIGN SCORE	[SHIFT][L]	DOC- 4.0
BEGIN PLAY AT CURSOR (ALL COLUMNS) ...	[SHIFT][B]	DOC-13.0
BEGIN PLAY AT CURSOR (ONE COLUMN)	[B]	DOC-14.0
COPY SCORE	[=]	DOC-18.0
CURSOR BACK	[SHIFT][SPACE BAR]	DOC-23.0
or	[SHIFT][CRSR ←]	
CURSOR DOWN	[CRSR ↓]	DOC-26.0
CURSOR FORWARD	[SPACE BAR] or [CRSR →]	DOC-24.0
CURSOR HOME (TOP OF CURSOR COLUMN) ...	[CLR HOME]	DOC-25.0
CURSOR UP	[SHIFT][CRSR ↑]	DOC-26.0
CURSOR TO VOICE 4 (PAGE 1)	[,<]	DOC-27.0
CURSOR TO VOICE 5 (PAGE 2)	[.>]	DOC-27.0
DELETE ENTRY (CLOSE UP)	[D]	DOC-29.0
DELETE ENTRY (LEAVE BLANK)	[INST DEL]	DOC-31.0
ENTER SECTION TO PLAY	[1-9] (HOW MANY TIMES)	DOC-47.0
THEN	[S] (SECTION)	
THEN	[1-8] (SECTION NUMBER)	
THEN	[A-M] (SECTION LETTER)	
ENTER SECTION HEADING	[S] (SECTION)	DOC-48.0
THEN	[A-M] (SECTION LETTER)	
ENTER SEGMENT (DRUMS)	[1-9] (HOW MANY TIMES)	DOC-50.0
THEN	[--] (SEGMENT HEADING)	
ENTER SEGMENT (EDIT MUSIC)	[1-9] (HOW MANY TIMES)	DOC-50.0
THEN	[A-M] (TRANSPOSE HEADING)	
THEN	[--] (SEGMENT HEADING)	
FIRST VIDEO LINE	[F]	DOC-58.0
THEN	[1-101] (LINE NUMBER)	
Causes the VIDEO PAGE to START with the LINE NUMBER above.		
GO TO OTHER PAGE (SHOW OTHER VOICES) .	[/?]	DOC-96.0
GO TO MENU (SONG STEPPER)	[f5]	DOC-61.0
GO TO SEGMENT/SCORE	[f7]	DOC-61.0
Alternates between last SEGMENT MODE used (1,3 OR 4) and SCORE.		
INSERT SPACE (ONE COLUMN)	[I]	DOC-68.0
INSERT SPACE (ALL COLUMNS)	[SHIFT][I]	DOC-69.0
LOOP TO BEGINNING	[L]	DOC-69.0
MIDI ALL BUSES OFF (ONE VOICE)........	[O]	DOC-82.0
THEN	[M] (ALL BUSES W-Z)	
Does not turn off CHANNEL(S) 2-9 on the Z-OUT BUS.		
MIDI BUS/CHANNEL ON (ONE VOICE).......	[M]	DOC-83.0
THEN	[00-99] (PRESET NUMBER)	
THEN	[M] (ALL BUSES W-Z)	
or	[W-Z] (ONE MIDI BUS)	
or	[2-9] (ONE MIDI CHANNEL OF Z-OUT)	
MIDI BUS/CHANNEL OFF (ONE VOICE)......	[O]	DOC-81.0
THEN	[W-Z] (ONE MIDI BUS)	
or	[2-9] (ONE MIDI CHANNEL OF Z-OUT)	
OOPS!	[SHIFT][O]	DOC-90.0
Restores previous ENTRY, to correct a mistake.		
PLAY SCORE	[f1] or [P]	DOC-91.0
PLAY SCORE WITH EXTERNAL CLOCK (SYNC).	[SHIFT][f1]	DOC-92.0
PRINT ALL SCORE PAGES	[SHIFT][£]	DOC-93.0
PRINT CURRENT SCORE PAGE	[£]	DOC-93.0
RESET	[RUN STOP][RESTORE]	DOC-96.0
SHOW OTHER VOICES (OTHER PAGE)	[/?]	DOC-96.0
STOP PLAYING (OR TUNING, DOC-109.0)...	[f3]	DOC-97.0
SYNC DEFINE (CLOCK IN/OUT)	[SHIFT][S]	DOC-97.0
TEMPO (MASTER)	[SHIFT][T]	DOC-98.0
TUNING	[←]	DOC-109.
VAMP OFF	[f7]	DOC-114.
VAMP ON	[f5]	DOC-114.

SONGSTEPPER DICTIONARY OF COMMANDS



```
SONG NAME                                  EDIT MODE
       D1       D2       V5       V6       V7       V8
101>         >        >M11  X >M11  Y >M51  Z >M51  W
102                3  *AA  3D*P1    3D*P1    3C*B8    3C*B9
103
104                         M51  X   M51  Y   M11  Z   M11  W
105                1  *AB  1D*P3    1D*P2    1D*P4    1D*P2
106                         M11  X   M11  Y
107                3  *AB  4C*MA    1C*R4    4C*MD    1C*MZ
108                1  *A3           1C*M8             M07  W
109                3*   20          2*  [illegible]   2I*B1
110                                                   M51  W
111                                                   1C*B1
112                                  M11  Y
113                         M11  X   2E*D1    M11  W   M51  Z
114                1  *A2  2D*D1    1E*D1    2D*Q1    4C*D4
115                1  *A2  1D*D1             1D*Q1    1C*D4
116                1  *A4                             1C*R5
117                                      6A
118                    20            M47  Y   OFF  M   OFF  M
119                4  *A1           4C*P1
120                                  OFF  Y
```

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&
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DELETE ENTRY (LEAVE BLANK)	DOC-31.0
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DELETE TRANSPOSE NOTE	DOC-33.0
DISPLAY FLATS	DOC-34.0
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SONGSTEPPER
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DICTIONARY OF COMMANDS

YOU GIVE THE COMPUTER A "COMMAND" WHEN YOU TYPE A KEY OR KEYS TO SIGNAL WHAT YOU WANT DONE.

THIS PART OF THE MANUAL OUTLINES ALL SONGSTEPPER AND MIDI DRUM SONGSTEPPER COMMANDS, IN ALPHABETICAL ORDER, BY ACTION OR RESULT DESIRED, e.g. "ENTER DRUM NUMBER." EACH DICTIONARY ENTRY IS FOLLOWED BY THE KEYSTROKE(S) THAT ACTUALLY CAUSE EXECUTION OF THE COMMAND, e.g. "----- [1-8]."

HOW TO READ ENTRIES IN THIS DICTIONARY

REFERENCES TO THE COMPUTER KEYBOARD

Any reference in this manual to a key on the computer keyboard appears as a number, symbol, or in CAPITAL letters surrounded by brackets [ ]. For example, [4] refers to the specific key numbered "4" and 4 (without brackets) refers to the numeral four. Sometimes a single computer key has several words on it. [RUN STOP] is an example of such a key.

On the other hand, in this manual, if you are asked to type RUN, with no brackets indicated, you must type in the three letters [R], [U], and [N] individually.

CAPITALIZATION AND USE OF THE [SHIFT] KEY

Notice that letters on the computer keyboard are CAPITALS. You do NOT have to use the [SHIFT] key to create a capital letter, unlike a typewriter. The majority of SONGSTEPPER and MIDI DRUM SONGSTEPPER commands require that you type a single key, which is shown as a capital letter:

[B]

The example above represents the BEGIN PLAY AT CURSOR (ONE) command. You give this command by simply typing the [B] key on the computer keyboard. So, ignore the distinction normally made on a typewriter keyboard between upper and lower case letters. That is, do NOT try to create a capital letter by using the [SHIFT] key. The alphabet keys on the computer keyboard ARE capital letters, all of the time.

TWO KEYS TOGETHER COMMANDS: THE [SHIFT] KEY

Often, a command REQUIRES use of the [SHIFT] key in conjunction with another key. This is shown like this:

[SHIFT][B]

In the example above, the BEGIN PLAY AT CURSOR (ALL) command, you first type the [SHIFT] key. While holding [SHIFT] down, you then type the [B] key, so BOTH keys are down together. If you accidentally type the [B] key first, you will give the "B" command, not the "SHIFT B" command. These are different commands! The "shift" commands are sensitive to order: hold the [SHIFT] key down first, then type the other key. You should use the [SHIFT] key only when explicitly told to do so!

Some commands are represented by symbols, such as "#" or "%". To produce such a symbol REQUIRES use of the [SHIFT] key on the computer keyboard, just as it would on the typewriter. Even though this may seem obvious on the computer keyboard, use of the [SHIFT] key will still be indicated explicitly. So, you will be told to type [SHIFT][#] rather than simply [#]. Either designation would require use of the [SHIFT] key; our way simply reminds you to use it.

COMMANDS INSENSITIVE TO SHIFT/UNSHIFT

Sometimes, for convenience, a key executes the same command whether the key is shifted or not. This case is shown like this:

[.] or [SHIFT][.]

Or this could be expressed:

[.] or [>]

In this example, [.] or [SHIFT][.] or [>] are the same key on the computer keyboard. In normal typing you would produce the > symbol only by using the [SHIFT] key. For this command, the format above indicates that the command will work whether the period/greater than key is shifted or not. We could also express the shifted version as [>]. In this specific case, the > greater than symbol serves as a graphic reminder of direction for movement from one video page to another.

TWO KEYS ONE AFTER THE OTHER COMMANDS

In a very few cases you must use two keys serially (first type and RELEASE one key and then type and release the other). We'll indicate this procedure as follows:

[D] then [1-8]

The example above instructs you to type and release the [D] key; then type and release ONE of the numbered keys from one through eight. (See below).

COMMANDS THAT OFFER CHOICE

Often you give a command that requires you to select from a range of numbers or letters to complete the command. Take our previous example:

[D] then [1-8]

This indicates that you should type and release the [D] key. Then type and release ONE of the numbered keys from 1 through 8. When the choice of letters/numbers is difficult to explain, we will simply use [--] dashes to indicate HOW MANY keystrokes may be made. For example:

[O] then [-]

This example requires you to type and release the letter [O], then type one key [-] to be specified. The allowable key (or keys) will be specified within the discussion of that command.

DISTINCTION BETWEEN ZERO AND THE LETTER "O"

In this manual the numeral zero has a slash through it: 100, 101, 102, etc. The letter O has no slash.

PROMPTS: MESSAGES FROM SONG PRODUCER

SONG PRODUCER carries on a conversation with you. It can give you messages on the screen that "prompt" action on your part. Sometimes the message has an element that changes; this will be shown in the manual using dashes "-----". The format for expressing screen prompts within the manual is:

SCREEN PROMPTS:	YOUR RESPONSE:
DO YOU WANT TO KEEP ------------- IN MEMORY?	type [Y] or [N] then [RETURN]

The 13 dashes "-------------" in this prompt are used to indicate the presence on the screen of the NAME of the song currently in memory. (You may use up to 13 letters or numbers to name a song, but no punctuation marks.) Since song name is a VARIABLE element in a prompt, we show it as such in this manual by using DASHES.

The NUMBER of dashes in a prompt represents the size of the "field" or maximum number of letters/numbers/etc. that is represented. Your mission, should you choose to accept, is to learn how to properly respond to such prompts, e.g. type [Y] for Yes, type [N] for No, or type numbers, etc. As always, the Secretariat will disavow your actions if you are killed or captured. Your potential responses are indicated by keystrokes that are bracketed [ ], as above.

IN SOME CASES THERE IS A SMALL DIFFERENCE IN WORDING BETWEEN SONGSTEPPER AND MIDI DRUM SONGSTEPPER PROMPTS FOR A COMMAND. IN THIS MANUAL, WHERE THERE IS A DIFFERENCE, THE SONGSTEPPER VERSION IS SHOWN. THE MIDI DRUM SONGSTEPPER PROMPT WILL CONVEY THE SAME MEANING, OFTEN USING FEWER WORDS.

MODES FOR THE COMMANDS

Finally, all commands DO NOT function at all times. Most commands work only when a certain video page or a certain MODE is displayed. The MODES are numbered from 1-9, and are listed on the MENU: e.g. DRUMS (1), TRANSPOSE (2), EDIT MUSIC (3), RECORD MUSIC (4), etc.).

The modes for which a command is relevant are presented at the head of the dictionary entry, starting with the lowest relevant mode number and progressing through the highest. For instance if you see:

SCORE (5):

at the beginning of a definition, you now know that this command does NOT function for MODES 1 through 4. (SCORE (5) is the lowest numbered mode that is relevant). Now, on with our bombastic review.

//

THE DICTIONARY ENTRIES

ALIGN SCORE ---------------------------- [SHIFT][L]

SCORE (5): The ALIGN SCORE command [SHIFT][L] aligns, or restarts all columns of the SCORE (5) immediately below a score line you indicate within the SCORE (5). Move the cursor to a (blank) space on the SCORE (5) and type [SHIFT][L]. The word

ALIGN

immediately appears at that cursor position. When the SCORE (5) is played and ALIGN is encountered in ANY column, the entire SCORE (5) immediately restarts on the score line immediately below the word ALIGN. That is, if ALIGN is read on line 16, the SCORE (5) will immediately restart ALL COLUMNS on the NEXT HIGHER NUMBERED SCORE LINE, 17 in this example. The SCORE (5) will restart ALL columns whether the segments or sections in all voice and drum columns have "finished" playing or not.

Use the ALIGN SCORE command [SHIFT][L] to get back to sanity after a free-form passage. In a free-form passage you may choose to ignore synchrony among voices and drum tracks, letting segments play freely. Such a section might feature segments having different lengths and different segment clocks--each voice acting as a soloist. For example, consider a complicated drum/percussion break. Timing can be so complicated it may be difficult to figure out how to get the tracks synchronized again. In this case use the ALIGN SCORE command [SHIFT][L] to restart all voices/tracks. The first entry encountered below the word ALIGN will restart--FOR ALL COLUMNS.

Since this command affects ALL columns, is it important in which column you put ALIGN? Yes! Even though all voices will RESTART TOGETHER after the word ALIGN is encountered, its placement can have a dramatic effect on whether all columns finish playing the entries placed PRIOR to the word ALIGN. Please remember that keeping voices synchronized in the score does NOT depend on how things look--the score is NOT like a player piano roll where things on the same line automatically play (or start) together! In particular, be aware that blank spaces on the score are not the same as musical "rests." Spaces in the score are ignored; they occupy NO TIME at all.

AN IMPORTANT NOTE ON THE CONCEPT OF A MUSICAL "REST"

The SCORE (5) reads ENTRIES ONLY. If you want a measure of rest, you must create a segment THAT IS a measure of rest, name it, and enter its name as a segment (or section) on the SCORE (5)! This is true both for DRUMS (1) and MUSIC (3) or (4) modes!

SONGSTEPPER and MIDI DRUM SONGSTEPPER SCORE (5) notation is like standard musical notation: ONLY notes and rests are recogniized. There is no such thing as a "blank" in musical notation, and the SONGSTEPPER SCORE (5) does not recognize a blank.

Score synchrony depends on your planning segment/section length and timing in each voice and drum track used. Imagine that each voice and drum track has a separate "reader" that simply encounters SCORE (5) entries, interprets their timing and plays them independent of the other readers. If you arrange segment clock ratios and segment lengths to synchronize voices, then that's how they will sound.

Since each column is "read" independently, successful performance of everything that precedes a restart depends on which column into which you place ALIGN. It is up to you to know how your music works, and determine which column you want to use to restart the score. Once ALIGN is encountered in any column, restart of ALL columns is assured starting on the next HIGHER NUMBERED score line.

See also the LOOP command [L].

//

AT DRUM TRACK? ------------------------ [@]

SCREEN PROMPTS:	YOUR RESPONSE:
DRUM TRACK D?	type [1-3] then [RETURN]

DRUMS (1) MIDI DRUM SONGSTEPPER ONLY: The AT DRUM TRACK? command [@] lets you hear (by typing [P] for Play) the DRUMS (1) segment on the screen as though that segment were entered on EITHER or BOTH drum tracks D1-D2 of the SCORE (5).

When a DRUMS (1) segment is on the screen, and you type the "at," or "ampersand" key [@], the screen asks you to which drum track(s) on the SCORE (5) you would like to TEMPORARILY assign the DRUMS (1) segment. No actual ENTRY is made on the SCORE (5).

Type [1] then [RETURN] to select SCORE (5) track D1. Type [2] then [RETURN] to select track D2.

If you would like to hear the result of putting this DRUMS (1) segment on BOTH SCORE (5) drum tracks, D1 AND D2, type [3] then [RETURN]. (For both, remember 1&2=3).

Now, while viewing that DRUMS (1) segment, type [P] and that DRUMS (1) segment will play AS THOUGH IT WERE ENTERED "at" the SCORE (5) drum track(s) you have specified.

MIDI DRUM SONGSTEPPER: TRACKS D1 AND D2

What is the NEED for this distinction between D1 and D2 on the SCORE (5) for playing a DRUMS (1) segment using MIDI DRUM SONGSTEPPER? Because MIDI DRUM SONGSTEPPER can send 16 different MIDI drum numbers, directly triggering 16 different sounds in a drum machine through a single MIDI cable.

(SONGSTEPPER can send only 8 different drum triggers, using 8 patch cords. The patch cords should be connected from the DRUM TRIGGER OUTS on the SONG PRODUCER to the individual GATE INPUTS on the drum machine.)

For MIDI DRUM SONGSTEPPER the single MIDI cable must be connected from the W-OUT MIDI jack on the SONG PRODUCER to the MIDI INPUT of the drum machine. That is, Bus W is for drums only in MIDI DRUM SONGSTEPPER.

YOU ARE NOT "SYNCING" THE DRUM MACHINE TO THE SONG PRODUCER. This connection allows MIDI DRUM SONGSTEPPER to directly PLAY the sounds within the drum machine. You are not using the drum machine's memory, and you are NOT using the drum machine's clock. The DRUMS (1) segments you have placed on the SCORE (1) will PLAY the sounds within the drum machine.

But a DRUMS (1) segment has only 8 possible numbers (1-8) on its grid! How do we play 16 different sounds using only 8 numbers? By making each drum track D1 and D2 in the SCORE (5) of a MIDI DRUM SONGSTEPPER song represent a different SET of user-programmed sounds. Two tracks with 8 different MIDI numbers each equals 16 different sounds.

MIDI DRUM SONGSTEPPER DRUM DEFAULTS

What are these 16 sounds? What is the sound of each number you enter on the grid of a DRUMS (1) segment in MIDI DRUM SONGSTEPPER?

Each time you load MIDI DRUM SONGSTEPPER, the system "defaults," to a standard set of MIDI NUMBER and MIDI VOLUME assignments for the DRUMS (1) segment grid numbers 1-8 for Tracks D1 and D2. This set of "default" numbers is stored on the MASTER PROGRAM diskette supplied with the SONG PRODUCER. The numbers are not displayed on the screen for your inspection each time MIDI DRUM SONGSTEPPER is loaded, but the assignments are made nonetheless. These are:

DRUM GRID #	SOUND
	TRACK D1
1	HI HAT OPEN
2	HI HAT CLOSED
3	CRASH CYMBAL
4	TOM 1
5	TOM 2
6	SNARE DRUM
7	RIM SHOT
8	BASS DRUM
	TRACK D2
1	RIDE CYMBAL
2	TAMBOURINE
3	HAND CLAPS
4	TOM 1 ACCENT
5	CABASA
6	SNARE DRUM ACCENT
7	COWBELL
8	BASS DRUM ACCENT

When you are in MIDI DRUM SONGSTEPPER , a DRUMS (1) segment placed in track D1 on the SCORE (5) will play the sounds shown for TRACK D1 above. A DRUMS (1) segment placed in track D2 on the SCORE (5) will play the sounds shown for TRACK D2 above.

(Some differences among drum machines may account for some variation. See the DEFINE DEFAULT DRUMS section in the MASTER MENU part of this manual for details).

STRIKING MANY DRUMS TOGETHER

DOES THIS MEAN YOU CAN PLAY 16 DIFFERENT DRUM SOUNDS SIMULTANEOUSLY using MIDI DRUM SONGSTEPPER? No.

First of all, any one SONGSTEPPER or MIDI DRUM SONGSTEPPER DRUMS (1) segment can translate only SEVEN numbers simultaneously. (Try that with arms and legs!) All EIGHT numbers 1-8 are available for any column in a DRUMS (1) segment, but a MAXIMUM OF SEVEN numbers can appear in a

DRUMS (1) column AT ONE TIME. That is, you should have at least ONE blank in EVERY column of any DRUMS (1) segment.

Because MIDI DRUM SONGSTEPPER can play TWO DRUMS (1) segments simultaneously, and any DRUMS (1) segment can transmit SEVEN numbers simultaneously, a maximum of 14 drum sounds can be played simultaneously in MIDI DRUM SONGSTEPPER.

NOTE: The SAME DRUMS (1) segment can be played by both SCORE (5) drum tracks D1 and D2 simultaneously by MIDI DRUM SONGSTEPPER. Or you can put DIFFERENT DRUMS (1) segments in tracks D1 and D2 to be played simultaneously.

EXTERNAL LIMITATIONS

Your drum machine may have a limited number of audio channels. This may restrict how many, or WHICH sounds can be played together. Perhaps your drum machine will play tambourine OR cowbell, but NOT BOTH at the same time.

It is possible to program one or more DRUMS (1) segments to signal the drum machine to play both at the same time, but this MIDI DRUM SONGSTEPPER programming CANNOT overcome the drum machine's limitations.

So, in MIDI DRUM SONGSTEPPER, each drum track D1 and D2 in the SCORE (5) CAN trigger a DIFFERENT set of EIGHT possible drum sounds. Each drum track can trigger ANY SEVEN of these EIGHT drum sounds SIMULTANEOUSLY. In MIDI DRUM SONGSTEPPER, 16 drum sounds are available; any 14 of these sounds could be triggered simultaneously.

Unlike SONGSTEPPER, in MIDI DRUM SONGSTEPPER it matters whether you enter a DRUMS (1) segment on Track D1 or D2 in the SCORE (5).

Since it matters on the SCORE (5), it is handy to be able to HEAR this potential difference as you actually create DRUMS (1) segments. The AT DRUM TRACK? command [@] lets you do this. You literally hear the DRUMS (1) segment that is on the screen as though it were being played "at" the track(s) D1 and/or D2 on the SCORE (5) you specify using the AT DRUM TRACK? command [@].

NOTICE: the track number 1, 2, or 3 MOST RECENTLY specified is displayed on the screen for MIDI DRUM SONGSTEPPER like this:

```
TRK D -
```

The dash "-" represents the track number from 1 through 3 that you have selected.

DRUMS (1) segments will play in the specified "TRK D -" shown until you specify a different track or tracks using the AT DRUM TRACK? command [@] again. That is, DRUMS (1) segment "at track" specification is NOT stored as part of a DRUMS (1) segment. It is temporary.

The effect of the AT DRUM TRACK? command [@] is temporary. In fact, you can use the AT DRUM TRACK? command [@] with any MIDI DRUM SONGSTEPPER DRUMS (1) segment as many times as you like. This has no bearing on ACTUAL entry of that DRUMS (1) segment on the SCORE (5).

For a discussion of HOW to assign MIDI drum numbers and MIDI volumes to the numbers 1-8 used on MIDI DRUM SONGSTEPPER DRUMS (1) segments, see the MIDI DRUM ASSIGN command [M] in this dictionary. You may custom tailor DRUMS (1) grid number sounds for each song!

///

AUTOCORRECT ---------------------------- [A]

SCREEN PROMPTS:	YOUR RESPONSE:
AUTO-CORRECT #?	type [1-16] then [RETURN]

RECORD MUSIC (4): The AUTOCORRECT command [A] lets you modify, or "correct" the rhythms in segments that you record live using the RECORD MUSIC (4) mode. Autocorrecting "squares up" the rhythmic patterns of a performance, or corrects rhythmic "inaccuracies," and makes notes fit within a rhythmic framework that has a "smallest note value" you can specify, e.g. eighth notes, sixteenth notes, etc. Think of autocorrect as a rhythmic template you use AFTER your performance to correct your playing.

ONLY RECORD MUSIC (4) SEGMENTS CAN BE AUTOCORRECTED. EDIT MUSIC (3) Segments are "correct" as programmed!

To autocorrect a RECORD MUSIC (4) segment, you must record it successfully. This can be done ONLY if you let the computer END the recording. DO NOT USE THE [SPACE BAR] TO STOP RECORDING UNLESS YOU WISH TO ERASE AND RERECORD!

To autocorrect the RECORD MUSIC (4) segment currently on the screen, type [A], then type a number from 1 to 16, then [RETURN]. Type [P] to play the result of this particular autocorrection.

What does the autocorrect number mean? The coarseness or fineness of the rhythmic template you place over your performance. PLEASE NOTICE THAT AUTOCORRECT NUMBER DOES NOT CHANGE THE PLAYBACK SPEED OF A RECORD MUSIC (4) SEGMENT! AUTOCORRECTION AFFECTS ONLY THE RESOLUTION OF PERFORMANCE, OR SMALLEST NOTE VALUE ALLOWED.

RECORD MUSIC (4) segments are recorded live using 128 divisions of a whole note. This is twice as fine as 64th notes. An autocorrect of "1" corrects your performance to express divisions no smaller than a 64th note. And so forth, like this:

AUTOCORRECT #:	SMALLEST NOTE:
1	sixty-fourth notes

2	thirty-second notes
4	sixteenth notes
8	eighth notes
16	quarter notes

What about the OTHER autocorrect numbers? Some autocorrect numbers such as 3, 6, 9, and 12, may make sense in compound time where you play three or six notes per beat instead of simple time, where you play two, four, or eight. Some of the other numbers may do strange things to your original performance!

FORTUNATELY, THESE AUTOCORRECTIONS CAN BE CHANGED OR REMOVED IF YOU WISH. See the AUTOCORRECT OFF command [SHIFT][A] below.

Experiment to find a good autocorrect number by listening. Experience teaches that a RECORD MUSIC (4) segment with lots of sixteenth notes often sounds good autocorrected to numbers 1 (sixty-fourth notes) or 4 (sixteenth notes). But an autocorrection of 2 (thirty-second note resolution) will displace sloppily-played sixteenths in time, creating annoying galloping. Another general rule: if you intend to use coarse autocorrects (4 and higher), play legato (connect the notes) when you record so the autocorrected version won't sound staccato (separated notes).

SAVING AN AUTOCORRECTED SEGMENT: If you do anything that causes a segment to be saved within memory (e.g. type [N], [SHIFT][N], go to the MENU, etc.)--and you have autocorrected the segment, the computer gives you one last chance to save the ORIGINAL non-autocorrected performance.

SCREEN PROMPTS:	YOUR RESPONSE:
DO YOU WANT TO SAVE THE AUTO-CORRECTED VERSION?	type [Y] or [N] then [RETURN]

If you type [Y] for Yes, the corrected version RATHER than the original will be saved within memory. (Only a SAVE operation saves to the diskette. See MENU MODES in this dictionary).

If you type [N] for No, the original version will be saved. You can always go back and autocorrect an original. You can't restore an original from an autocorrected version.

Should you FORGET to save the original, the prompt above lets you do so before the original is lost--type [N]. Of course if you DO wish to save the corrected version, type [Y] for Yes. Then type [RETURN].

A SUGGESTION: save a good RECORD MUSIC (4) segment immediately--before autocorrecting. A good "dummy" save, that doesn't take you away from the video page is:

SCREEN PROMPTS:	YOUR RESPONSE:
	type [N]
SEGMENT NAME?	type [RETURN]

After the original is saved, copy it using the COPY SEGMENT command [=]. You MUST give each copy a DIFFERENT name! Every segment MUST have a different name. Even identical twins have different names!

THEN autocorrect the COPY. Now you have BOTH original and autocorrected performances. Copy the original several times (different names!) and save versions with different autocorrect numbers, etc.

EDITING A RECORD MUSIC (4) SEGMENT

Only an AUTOCORRECTED RECORD MUSIC (4) segment can be turned into an EDIT MUSIC (3) segment. After a RECORD MUSIC (4) segment is turned into an EDIT MUSIC (3) segment, you can SEE what you played live in order to edit, or change it. You may CHOOSE to edit any RECORD MUSIC (4) segment, if you want to correct mistakes using standard EDIT MUSIC (3) note or rest entry/delete/replace commands.

When you have an AUTOCORRECTED RECORD MUSIC (4) segment on screen, type [E] and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
RELATIVE TO SEGMENT CLOCK 1: --	
BEATS/MEASURE IS?	type [RETURN] (see below)

Let's ignore your response for the moment. The number "--" of the segment clock shown in the prompt above will always be the SAME as the autocorrect number you selected for the segment you intend to edit. For instance, if you select the autocorrect number "4", then type [E], the prompt will appear:

SCREEN PROMPTS:	YOUR RESPONSE:
RELATIVE TO SEGMENT CLOCK 1: 4	
BEATS/MEASURE IS?	type [RETURN] (see below)

The prompt will display the RECORD MUSIC (4) autocorrect number you selected as the associated EDIT MUSIC (3) segment clock number. The RECORD MUSIC (4) autocorrect number BECOMES the EDIT MUSIC (3) segment clock number when you Edit by typing [E]. That is, your RESPONSE to the prompt above does NOT determine the EDIT MUSIC (3) segment clock number; your selection of an autocorrect number prior to typing [E] DOES.

So, selection of autocorrect number for a RECORD MUSIC (4) segment determines the possibility of segment clock manipulation of the resulting EDIT MUSIC (3) segment. That is, all RECORD MUSIC (4) segments are recorded at the equivalent of a 1:1 segment clock speed, and the playback speed of a RECORD MUSIC (4) segment CANNOT be changed by specifying a different autocorrect number.

But the playback speed of an EDIT MUSIC (3) segment CAN be manipulated by changing its segment clock number. As we have seen, the autocorrect number you choose for a RECORD MUSIC (4) segment prior to typing [E] determines the resulting EDIT MUSIC (3) segment clock number! So it's important to consider where you might want to GO when you turn a RECORD MUSIC (4) segment into an EDIT MUSIC (3) segment--which autocorrect number do you want?

If you autocorrect a RECORD MUSIC to "1" and use the EDIT RECORD MUSIC [E] command you will produce an EDIT MUSIC (3) segment on screen with a segment clock of "1," that is, 1:1. You can't play this EDIT MUSIC segment any faster with a change of segment clock; 1:1 is the fastest segment clock. Suppose, however, you had chosen an autocorrect of "2" and typed [E]. Now the EDIT MUSIC (3) segment has a segment clock of "2," that is, 1:2. Autocorrect to "4," type [E], and the resulting EDIT MUSIC (3) segment has a segment clock of 1:4.

THE EDIT MUSIC (3) SEGMENTS THAT RESULT FROM DIFFERENT AUTOCORRECTION CHOICES WILL ALL PLAY AT THE SAME SPEED. But, segments with clocks of 1:2 or 1:4 can be speeded up by choosing a lower segment clock number, using the TIMING A SEGMENT command [T]. So, the tradeoff for choice of an autocorrect number involves not only how a given autocorrect number makes the RECORD MUSIC (4) segment SOUND, but also how you might want to manipulate the resulting segment clock of the EDIT MUSIC (3) segment that is yielded after typing [E].

WARNING! A CHANGE OF A RECORD MUSIC (4) SEGMENT TO AN EDIT MUSIC (3) SEGMENT USING THE EDIT RECORD MUSIC COMMAND [E] IS PERMANENT!!!! YOU CANNOT CHANGE AN EDIT MUSIC (3) SEGMENT TO A RECORD MUSIC (4) SEGMENT. COPY YOUR ORIGINAL RECORD MUSIC (4) PERFORMANCES TO AVOID LOSING THEM!!!!

YOUR RESPONSE TO THE BEATS/MEASURE PROMPT:

Earlier we ignored your RESPONSE to the BEATS/MEASURE prompt following use of the EDIT RECORD MUSIC command [E]. When you create a RECORD MUSIC (4) segment, autocorrect it, and type [E]:

SCREEN PROMPTS:	YOUR RESPONSE:
RELATIVE TO CLOCK SEGMENT 1: -- BEATS/MEASURE IS?	type [1-32] then [RETURN]

Your RESPONSE will NOT affect how the music sounds, since the number of BEATS/MEASURE, or beats per measure, will NOT change the EDIT MUSIC (3) segment clock number, only how the music is NOTATED on the screen. That is, your entry determines how many quarter notes it takes to make a measure on the screen. Typically, when working in 4/4 time, especially when the segment clock is 1:4, respond by entering [4] for this prompt. Also, your response is not critical, since you can always use the TIMING OF SEGMENT command [T] to alter the number or BEATS/MEASURE later.

See also EDIT RECORD MUSIC command [E].

See also AUTOCORRECT OFF command [SHIFT][A].

//

AUTOCORRECT OFF ---------------------- [SHIFT][A]

RECORD MUSIC (4): The AUTOCORRECT OFF command [SHIFT][A] can remove autocorrection from RECORD MUSIC (4) segments under certain conditions.

This command may be alternated with the AUTOCORRECT command [A] to allow comparison of original versus autocorrected RECORD MUSIC (4) performances.

The AUTOCORRECT OFF command [SHIFT][A] can NOT be executed on a RECORD MUSIC (4) segment after that segment has been saved to memory in autocorrected form. That is, the autocorrect number of a RECORD MUSIC (4) segment previously saved within memory WITH an autocorrect number cannot be changed or removed.

The AUTOCORRECT OFF command [SHIFT][A] has no effect on an EDIT MUSIC (3) or DRUMS (1) segment.

//

BEGIN PLAY AT CURSOR (ALL) ------------ [SHIFT][B]

SCORE (5): The BEGIN PLAY AT CURSOR (ALL) command [SHIFT][B] defines the line on which ALL columns of the SCORE (5) will begin when the SCORE (5) is played. The "beginning" of the SCORE (5) can be changed; it does NOT necessarily have to be the lowest numbered score line. This is analogous to a conductor saying "please start at line seven."

Move the cursor in any column to the desired beginning score line, type [SHIFT][B] and >>>>>> greater than symbols will appear across the SCORE (5) in every column. This is the starting line for the SCORE (5) until you type [SHIFT][B] again.

When you type [P] or [f1] to play, the SCORE (5) will begin from the line indicated with >>>>>> symbols. When using an external clock, the SCORE (5) will always start at the >>>>>> symbols.

BE AWARE that a voice V1-V8 on the SCORE (5) will NOT play unless its MIDI program/bus assignment is made. When the

SCORE (5) is played, it "looks" for MIDI program/bus assignments such as "M29 W" for each voice. If it doesn't find this information, that voice will not sound. If you are editing sections/segments on the SCORE (5) and wish to start at various points, put additional MIDI program/bus assignments in the SCORE (5) on the "first" score line as defined. Better, at the beginnings of sections that are called by the SCORE (5). See MIDI PROGRAM BUS/VOICE command.

The SCORE (5) ALWAYS plays starting at the)))))) symbols you last defined using the BEGIN PLAY AT CURSOR (ALL) command [SHIFT][B], even if this beginning score line isn't on the screen. It is possible to display a different part of the SCORE (5) and play (type [P] or [f1]) the SCORE (5) from the beginning)))))) line not currently on screen. Also, it is possible to view a DRUMS (1) or EDIT MUSIC (3) or RECORD MUSIC (4) segment while playing (type [f1]) the SCORE (5).

See also the FIRST LINE ON VIDEO? command [F].

///

BEGIN PLAY AT CURSOR (ONE) ------------ [B]

SCORE (5): The BEGIN PLAY AT CURSOR (ONE) command [B] defines where one particular column of the SCORE (5) will begin. Place the cursor on the SCORE (5) column of interest, and move to the score line desired. Type [B] and a single greater than) symbol will appear in that column only--at the cursor position. This indicates the beginning score line for this column ONLY. (Note: presence of the cursor obscures the) symbol. The) symbol can be seen after you move the cursor.)

The BEGIN PLAY AT CURSOR (ONE) command [B] can be executed independently for each column--voice or track--in the SCORE (5). One useful application is "muting" a single track or voice. Move the cursor to the column of interest to the score line at least ONE LINE NUMBER GREATER than the last score line that has an entry in that column. That is, move the cursor below the last entry in a column. Type [B]. Now when the SCORE (5) plays it starts "after" the information in the column so muted. The muted voice or track literally starts where it has nothing to say. Remember, the SCORE (5) reads downward, and blanks DO NOT create sound--(or rests!).

///

CHANGE SEGMENT NAME ------------------ [C]

SCREEN PROMPTS:	YOUR RESPONSE:
NEW NAME?	type [--] then [RETURN]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): EVERY drums or music segment has a two-character name. Allowable characters for this name include any combination of letters and numbers, the so-called "ALPHANUMERIC" characters. In this scheme, "DA" and "AD" are DIFFERENT names.

RECOMMENDATION: Use LETTERS only to name a SEGMENT, since a SECTION in the SCORE (5) MUST have a number in its name. You will never confuse a segment with a section if you follow this advice.

When you name a segment, the computer reserves a place in memory for something with that name. You can "clear" a segment and make it contain no information but you CAN'T ERASE A SEGMENT NAME. Instead, you use this CHANGE SEGMENT NAME command [C] to rename segments that have unwanted names.

While viewing a DRUMS (1), EDIT MUSIC (3), or RECORD MUSIC (4) segment, type [C].

Then type the NEW two-character name for the new name, and type [RETURN].

The computer will NOT allow entry of an existing segment name. It will ask for a new name until you give it one.

If you mistype, use the [INST DEL] key to erase the latest entry, and retype. NOTE: If you make typing errors and happen to get the cursor out of position, be sure to leave the space normally found between the question mark in the prompt and your two-character name. Otherwise the computer may interpret the second letter of the name you supply as the first and only letter.

//

CLEAR SEGMENT ------------------------ [SHIFT][CLR HOME]

SCREEN PROMPTS:	YOUR RESPONSE:
YOU ARE CLEARING SEGMENT -- ARE YOU SURE?	type [Y] or [N] then [RETURN]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): The CLEAR SEGMENT command [SHIFT][CLR HOME] clears all information from a drums or music segment, making it blank. The segment is cleared but it's NAME is NOT cleared from memory.

When viewing a DRUMS (1), EDIT MUSIC (3), or RECORD MUSIC (4) segment, type [SHIFT][CLR HOME], a two-key command.

The prompt warns you that you are clearing the segment named "--", the one on the screen when you give the command. The prompt also gives you the opportunity to change your mind and NOT clear the segment; type [N] for No.

If you type [N], the screen will simply display the segment that was on the screen at the time the command was given.

If you type [Y] for Yes, indicating you DO wish to clear the segment, the screen will then prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
RESERVE SEGMENT NAME -- FOR EDIT, RECORD, OR DRUMS?	type [E] or [R] or [D] then [RETURN]
	or, to avoid clearing this segment, type [RETURN] only

After you type [E], [R], or [D], the screen will display a blank segment of the mode requested, with the cleared segment's name. You may use this segment now, or later. If you don't like the "mode reservation" you selected, type the CLEAR SEGMENT command [SHIFT][CLR HOME] again, answer [Y], then type the preferred letter for the preferred segment mode.

NOTICE: WHEN THE "RESERVATION" PROMPT APPEARS YOU CAN SIMPLY TYPE [RETURN] AND THE SEGMENT WILL NOT BE CLEARED. THIS IS A SECOND CHANCE TO AVOID CLEARING A SEGMENT BY ACCIDENT.

This command is particularly useful if you have experimented and wish to wipe the slate clean. Be aware that this command affects only the segment on the screen at the time you give the CLEAR SEGMENT command [SHIFT][CLR HOME]. NOTE ALSO THAT SOME KEYBOARDS SPELL OUT BOTH WORDS ON THE CLEAR KEY--[CLEAR HOME].

It makes sense to clear segments you do not wish to use in a particular song. This saves computer memory.. Note, however that this command does NOT clear the NAME of the segment from memory. You may call up a cleared segment by its name whenever you want to start with a blank segment. Then if you don't like the name, change it using the CHANGE SEGMENT NAME command [C] described above. In this way you need not clutter memory with segment names not actually used.

//

COPY SEGMENT -------------------------- [=] or [SHIFT][=]

SCREEN PROMPTS:	YOUR RESPONSE:
NEW NAME?	type [--] then [RETURN]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): The COPY

SEGMENT command [=] is used to make an exact copy of all pages of a DRUMS (1), EDIT MUSIC (3), or RECORD MUSIC (4) segment.

Display the segment on the screen, and type [=].

Type the NEW two-character name for the copy. Then type [RETURN].

You may copy segment(s) as many times as memory allows, but each copy is a "new" segment to the computer and MUST have a unique name. That is:

ABSOLUTELY NO TWO SEGMENTS OF THE SAME SONG, REGARDLESS OF MODE (1), (3), (4) IN SONGSTEPPER OR MIDI DRUM SONGSTEPPER MAY HAVE THE SAME NAME. ALL SEGMENT NAMES WITHIN A SONG MUST BE UNIQUE!

(Of course, you may use the same name in different SONGS. The computer deals with ONE song at a time, and is unaware of names in other songs. Otherwise you would soon run out of names! But within the boundaries of the song currently in memory, the computer must have some way of distinguishing elements such as segments. This requires UNIQUE names within the song.)

MAKING CHORDS

This command is particularly useful when you want to create chords, notes that sound simultaneously. Copy the first EDIT MUSIC (3) segment to create a (rhythmic) duplicate and use the up-arrow key to replace/change notes to new chord members. See the REPLACE NOTE command [ ].

For example, the original EDIT MUSIC (3) segment might have the note "C" played in a complicated rhythm. You want to produce a series of C Major CHORDS C-E-G in that rhythm. Use the COPY SEGMENT command [=]. THEN replace the note C with E in the copy. Copy again and use the up-arrow key to change notes to G. Presto, CHORDS in the SAME complicated rhythm as the original.

Of course any PROGRESSION of chords can be created this way, by simply taking care how musical LINES stack up or coincide. A polyphonic system like the SONG PRODUCER can always create chords. A chord-oriented system does not always produce good polyphony. The COPY SEGMENT command [=] is a short cut FOR producing vertical simultaneities, or CHORDS.

COPYING RECORD MUSIC (4) PERFORMANCES

This command is also useful when dealing with autocorrection of RECORD MUSIC (4) segments. You should immediately copy a RECORD MUSIC (4) segment you like, so the original performance is always available. Make several copies so you can have autocorrected versions with different autocorrection numbers, etc.

Finally, you might create a segment that is very similar to another, but with slight changes. Rather than reenter all the redundant information, copy the original segment and edit the copy.

REMEMBER: UNIQUE SEGMENT NAMES!

Every segment in a song requires a unique name--"copies" and originals cannot share the same name--EVER!

Nor can you give BOTH a DRUMS (1) and an EDIT MUSIC (3) or RECORD MUSIC (4) segment the same name. EACH SEGMENT IN A SONG REQUIRES A UNIQUE NAME REGARDLESS OF MODE.

//

COPY SCORE ------------------------------ [=] or [SHIFT][=]

SCREEN PROMPTS:	YOUR RESPONSE:
COPY FROM COLUMN?	type [1-8] or [A] then [RETURN]
FROM LINE?	type [1-119] then [RETURN]
TO LINE?	type [2-120] then [RETURN]
YOU ARE ABOUT TO ERASE VOICE/ DRUM / ALL COLUMNS FROM LINE --- TO LINE --- AND REPLACE IT WITH NEW DATA	
ARE YOU SURE?	type [Y] or [N] then [RETURN]

SCORE (5): The COPY SCORE command [=] lets you copy parts of the SCORE (5) and move them to a place on the SCORE (5) determined by cursor position AT THE TIME THE COMMAND IS GIVEN. All SCORE (5) entries EXCEPT section HEADINGS are copied (see below).

The COPIED information is not removed from the SCORE (5). However, care must be taken WHERE you put the copy to avoid "overwriting," or destroying other SCORE (5) entries. CURSOR POSITION AT THE TIME THIS COMMAND IS GIVEN IS CRITICAL.

PROCEDURE

First, make a mental note of the column number (1-8) of the information you want to copy.

Then note the consecutive score lines by number in that column ("FROM line --- TO line ---") you want to copy, from lowest to highest score line number.

The lowest number is the score line the group to be copied starts on. The highest score line number will be the last line you actually want to include in the group to be copied. That is, if you want to end on and include, say line 37, you must remember that 37 will be your highest line number, the "TO" category.

CURSOR POSITION AT THE TIME YOU EXECUTE THIS COMMAND IS CRITICAL

Before typing [=] you should move the cursor to a BLANK area of the SCORE (5), unless you DO wish to "overwrite," or destroy existing SCORE (5) information.

The cursor should be moved to the first score line on the area on the SCORE (5) TO which you wish to move copied information. Then move the cursor to the column you would like to move the copied information TO.

The first entry of the copied entries will (eventually) appear at the CURRENT cursor position at the time you execute the COPY SCORE command by typing [=]. This means it is important to be aware of the score line AND column to which you initially move the cursor. After you type [=], the first prompt is:

SCREEN PROMPTS:	YOUR RESPONSE:
COPY FROM COLUMN?	type [A] or [1-8] then [RETURN]

ALTERNATIVE [A]: COPYING ALL COLUMNS

The first prompt asks you from which column you would like to copy information.

If you type [A] then [RETURN], the computer will copy from ALL TEN columns, drum Tracks D1,D2 and voices V1-V8.

In this case all columns are to be copied, including those voice columns that are NOT currently on display.

So it does NOT matter which COLUMN you place the cursor in prior to giving this [A] variant of the COPY SCORE command [=].

The score line at which the cursor resides at the time of the command will still be critical.

ALTERNATIVE [1-8]: COPYING FROM A SINGLE COLUMN

If you don't want to copy from all columns simultaneously, you can copy from one at a time.

Type [1-8] then [RETURN] in response to the first prompt shown above.

Your response [1-8] to the first prompt dictates the column FROM which information will be copied.

Cursor position dictates where copied score lines will be PLACED. Copied information will appear only in the column where the cursor is at the time you type [=] to start the copying process. That is, when copying single columns, cursor column position at the time the [=] key is typed dictates TO which column copied information will be SENT.

COLUMNS 1&2: DISTINCTION BETWEEN DRUMS AND VOICES

There are BOTH drum and voice columns numbered "1" and "2." How does the computer know whether to copy from a drum or a voice column when you answer "COPY FROM COLUMN?" with [1] or [2]? In this case, the computer will copy from a drum track if the CURSOR is in a drum track D1 or D2 when the COPY SCORE command is initiated. It will copy from a voice track V1 or V2 if the CURSOR is in ANY voice track V1-V8 at the time of the command. It won't let you copy music to drums or vice versa! So, don't ask for column 3 if the cursor is in a drum column when you give this COPY SCORE command [=]!

The next prompt asks:

SCREEN PROMPTS:	YOUR RESPONSE:
FROM LINE?	type [---] (first line #) then [RETURN]

Type the number of the FIRST score line you are interested in copying and type [RETURN]. The copy will INCLUDE the score line number you enter here. The next prompt asks:

SCREEN PROMPTS:	YOUR RESPONSE:
TO LINE?	type [---] (last line #) then [RETURN]

Enter the last score line number that you want copied and type [RETURN].

NOTE: The first, last, and consecutively numbered score lines between the first and last line numbers entered are copied. The "FROM" first line must ALWAYS be smaller than the "TO" last line. That is, copying is always from a lower line number to a higher one.

THE "LAST CHANCE" PROMPT ASKS:

SCREEN PROMPTS:	YOUR RESPONSE:
YOU ARE ABOUT TO ERASE VOICE / DRUM / ALL COLUMNS FROM LINE --- TO LINE --- AND REPLACE IT WITH NEW DATA. ARE YOU SURE?	type [Y] or [N] then [RETURN]

The first lines of the prompt above reflects your answer to the COPY FROM COLUMN? part of the previous prompt.

If you typed [A] for All columns, the prompt above will say ALL COLUMNS in its first line, warning you that ALL columns are about to be overwritten with copied information at score lines stipulated.

Otherwise, it will warn you that a VOICE or DRUM column is about to be overwritten with copied information.

The "erasure" refers to score lines starting where the cursor is PRESENTLY located. If the area on HIGHER numbered score lines DOWN the screen from the cursor is NOT blank, or if you aren't confident, type [N] then [RETURN], and reread this.

If you are sure, type [Y] and the command is complete. The data copied will appear in the column where the cursor is located, starting on the score line where the cursor is located.

The reason you copy SCORE (5) information is NOT simply to repeat a passage--you can do this easily with other SCORE (5) procedures. Typically you want to make changes that may be few in number, but significant, such as alteration of MIDI program numbers in a section. Rather that having to reenter all the entries of a section, you make a copy and simply edit this copy.

COPYING AND SECTION HEADINGS

You could put the cursor in column 5 in order to copy TO column 5, type [=] and copy entries FROM any other column, say 7. And sometimes you might want to do this.

Because of this cross-column copying capability, however, it is necessary that the COPY SCORE command [=] DOES NOT COPY SECTION HEADINGS.

A section HEADING has a SOLID BAR THAT APPEARS ACROSS AN ENTIRE COLUMN ON THE SCORE (5). A section HEADING always contains the NAME of a section. A section NAME always has one number followed by one letter, e.g. "4B." (See ENTER SECTION HEADING command).

When you use the COPY SCORE command [=], it inserts a BLANK in the place of ANY section HEADING you try to copy, which requires you to reenter section headings as appropriate after a group of score lines has been copied and moved.

Why? Think about it. When you CREATE a section in the SCORE (5), or give it a section HEADING, you enter a single letter and the COMPUTER supplies the number of the column YOU'RE IN to complete naming that section. See the ENTER SECTION HEADING command. Therefore:

> IN SONGSTEPPER OR MIDI DRUM SONGSTEPPER, THE NUMBER IN A SECTION HEADING IS ALWAYS THE SAME AS THE COLUMN NUMBER WHERE THE SECTION HEADING RESIDES.

When you cross-copy using the COPY SCORE command [=] it might be possible to transfer a section HEADING say 3M from column 3 to column 6, for instance. But a section HEADING with the number 3, like 3M, can NOT exist in column 6.

A SECTION HEADING APPEARS IN THE SCORE (5) ON A SOLID BAR ACROSS A COLUMN IN THE GENERAL FORMAT:

4B

The COPY SCORE COMMAND [=] does NOT copy section HEADINGS such as this.

The COPY SCORE command [=] copies SCORE (5) entries OTHER than section HEADINGS: segments, MIDI BUS/VOICE assignments, etc. and "SECTIONS TO PLAY."

The name of a SECTION TO PLAY appears in a column on an INCOMPLETE BAR, a background that is NOT completely solid across the entire column.

A SECTION TO PLAY APPEARS ON THE SCORE (5) IN THE GENERAL FORMAT:

9* 4B

WHERE 4B IS THE SECTION THAT IS TO BE PLAYED.

The COPY SCORE command [=] DOES copy such SECTION TO PLAY entries.

So, the COPY SCORE command [=] will copy most entries, including entries that "CALL" sections to play them, such as the one shown immediately above. See the ENTER SECTION TO PLAY command.

But, the [COPY SCORE] command [=] will NOT copy the section HEADING entry itself. See the ENTER SECTION HEADING command.

COPYING BLANK SCORE LINES: BLOCK DELETES

If you wish to delete a large block of score lines, put the cursor on the first score line of the entries to be deleted and type the COPY SCORE command [=]. Select a BLANK area of the SCORE (5) to be copied. The rules for copying are exactly as above, but you must copy blanks rather than entries.

//

CURSOR ALIGN PAGE -------------------- [SHIFT][.]

EDIT MUSIC (3): This command TEMPORARILY realigns an EDIT MUSIC (3) video page to start the page from the note/rest above the cursor at the time the command is given.

Move the cursor to any note or rest on the video page.

Type the CURSOR ALIGN PAGE command [SHIFT][.] two-key combination.

The video page will "align," making the note/rest formerly over the cursor the FIRST note/rest at the beginning (extreme left) of the new, temporary video page.

This command is simply a way to temporarily move the "window" that displays video pages. Suppose that only the last portion of an EDIT MUSIC (3) video page and the first portion of the following page are of interest. To temporarily realign the "window" to display BOTH portions of interest on screen on the same page, move the cursor to the first note/rest of interest on the first page and perform the CURSOR ALIGN PAGE command [SHIFT][.]. The video page will align to START with that note of interest and you will see following notes in the passage wihout having to shift from page to page.

This command always "aligns" starting from any EDIT MUSIC (3) page to the next-higher numbered page of the same segment. This command has no use on an EDIT MUSIC (3) segment that has only ONE video page.

After this command has been performed, all of the information "downstream," on higher numbered pages, will temporarily reflect the realignment, and can be viewed using standard page commands. See GO TO NEXT MUSIC PAGE command [.] and GO TO PRECEDING MUSIC PAGE command [,].

This alignment caused by the CURSOR ALIGN PAGE command [SHIFT][.] will be in effect (temporarily) until you return from higher numbered pages to the page number on which you originally gave the command. Then the original alignment of notes/page will return.

See also all GO TO page commands such as [.] and [,].

//

CURSOR BACK -------------------------- [SHIFT][SPACE BAR]

DRUMS (1), EDIT MUSIC (3), SCORE (5): The CURSOR BACK command [SHIFT][SPACE BAR] causes the cursor to move one "element" to the LEFT on the video page.

An "element" is: one column on the DRUMS (1) grid, a note or rest on an EDIT MUSIC (3) video page, or one column on the SCORE (5).

This command features "key repeat." If you hold the [SHIFT][SPACE BAR] keys down, the cursor will move repeatedly until you release the keys.

Note however, that the cursor nevers "scrolls" off of any video page onto another page. That is, when the cursor reaches the leftmost position ON THE SCREEN, it can go no further left, no matter how many times the CURSOR BACK command [SHIFT][SPACE BAR] is repeated.

From that extreme position you must go "forward," (See the CURSOR FORWARD command [SPACE BAR]), or give a command that displays a different page.

NOTE: THERE IS A "TYPE AHEAD BUFFER" THAT STORES YOUR KEYSTROKES, IN CASE YOU TYPE INDIVIDUAL KEYSTROKES FASTER THAN THE DISPLAY CAN UPDATE. ACTUAL CURSOR MOVEMENT ON SCREEN MAY LAG SLIGHTLY BEHIND REPEATED SINGLE CURSOR MOVEMENT KEYSTROKES. THE CURSOR WILL CONTINUE TO MOVE UNTIL THIS BUFFER IS EMPTY, SO THE CURSOR MAY MOVE AFTER YOU HAVE CEASED TOUCHING THE [SHIFT][SPACE BAR] OR OTHER CURSOR MOVEMENT KEYS.

TIED NOTES AND COMPOUND RESTS

On any EDIT MUSIC (3) page, the computer interprets tied notes as ONE note. Also, multiple "compound" rests that are added up and entered with a single [R] entry (see ENTER REST command [1-9-0] then [R].) are interpreted as ONE rest.

So, when you use this command, the cursor wll leap from THE END of such a compound and skip over notes or rests on the page until it gets to the BEGINNING of the compound.

Since the computer interprets these compound elements as a single entity, no information is being skipped. However, editing of individual notes/rests of such a compound cannot be done. You may delete, replace, etc. the entire compound only, OR choose to replace the compound by entering notes/rests INDIVIDUALLY.

See also the DELETE NOTE/REST command [D] for an explanation of how to edit compound rests and tied notes.

//

CURSOR FORWARD ------------------------ [SPACE BAR]

DRUMS (1), EDIT MUSIC (3), SCORE (5): The CURSOR FORWARD command [SPACE BAR] causes the cursor to move one "element" to the RIGHT on the video display.

An "element" comprises one column on the DRUMS (1) grid, a note or rest on a EDIT MUSIC (3) page, or one column on the SCORE (5).

IT IS IMPORTANT TO KNOW THAT THE CURSOR WILL MOVE FREELY "FORWARD" ON A DRUM SEGMENT (1) GRID, EVEN IF THE GRID IS BLANK AND HAS NEVER BEEN PROGRAMMED. THIS IS BECAUSE, ON THE DRUM GRID, A "BLANK" IS A MUSICAL REST. ON THE DRUMS GRID, TIMING IS REPRESENTED SPATIALLY.

THE CURSOR MOVES FORWARD AUTOMATICALLY ON AN EDIT MUSIC (3) SEGMENT TO ALLOW ENTRY OF THE "NEXT" NOTE. YOU CANNOT MOVE THE CURSOR FORWARD THROUGH A BLANK EDIT MUSIC (3) SEGMENT. ALL RESTS ON AN EDIT MUSIC (3) SEGMENT ARE CREATED BY YOU AND DISPLAYED. THERE IS NO SUCH THING AS A BLANK WITHIN AN EDIT MUSIC (3) SEGMENT. ON AN EDIT MUSIC (3) SCREEN, TIMING IS REPRESENTED BY NOTATION.

This command features "key repeat." If you hold the [SPACE BAR] down the cursor will move repeatedly until you release the key.

Note that the cursor nevers "scrolls" off of any video page onto another page. That is, when the cursor reaches the rightmost position ON THE SCREEN, it can go no further right, no matter how many times the CURSOR FORWARD command is repeated.

From that extreme you must go "back," (See the CURSOR BACK command [SHIFT][SPACE BAR]), or give a command that takes you to another video page.

On any EDIT MUSIC (3) page, the computer interprets tied notes as ONE element. Also, multiple rests that are added up and entered with a single [R] keystroke (see ENTER REST command [1-9-0] then [R].) are interpreted as ONE element.

SO, when you use this command, the cursor will leap from THE BEGINNING of such compounds and skip notes or rests on the page until it arrives at the END of the compound. Since the computer interprets these compound elements as a single entity, no information is being skipped.

However, no editing of individual notes/rests of such a compound may be done. You may delete, replace, etc. the entire compound only, OR choose to replace the compound by entering notes/rests INDIVIDUALLY.

CURSOR MOVEMENT AND PAGE/MEMORY LIMITS

The cursor will NOT scroll from one page to another. After PAGE 1 is fully programmed, you must give a command to go to the next video page. See GO TO NEXT MUSIC PAGE command [.].

An EDIT MUSIC (3) segment is limited to 120 "events:"

> Any entry made using the [RETURN] key is worth TWO events. For example, a note with no slur/tie mark.
>
> Any entry made using the [S] key is worth ONE event. For example, a note with a slur/tie mark.
>
> Any entry made using the [R] key is worth ONE event. For example, any rest, including a compound rest made by striking several number keys to add up a duration.

When the limit of 120 events is reached in an EDIT MUSIC (3) segment, the cursor will REFUSE to go forward.

See also the DELETE NOTE/REST command [D] for an explanation of how to edit compound rests and tied notes.

//

CURSOR HOME -------------------------- [CLR HOME]

DRUMS (1): This command moves the cursor to the FIRST (leftmost) column of the FIRST page of the DRUMS (1) segment you are viewing.

EDIT MUSIC (3): This command moves the cursor to the FIRST note/rest of the FIRST page of the EDIT MUSIC (3) segment you are viewing.

SCORE (5): This command moves the cursor to the TOP LINE (lowest numbered score line) of the portion of the SCORE (5) currently displayed on the screen. The cursor stays in the column it was in at the time of the command.

ON SOME COMPUTER KEYBOARDS "CLEAR" IS SPELLED OUT ON THE [CLR HOME] KEY: [CLEAR HOME].

//

CURSOR LEFT/UP -------------------------- [SHIFT][CRSR keys]

SCORE (5): This commands uses the [CRSR] keys found below the [RETURN] key to move the cursor on the SCORE (5).

When [SHIFT] is down, these keys move the cursor to the left OR up (see arrows on keys) respectively.

Movement in ONE direction at a time is possible. Do NOT press both [CRSR] keys at the same time.

Both [CRSR] keys feature KEY REPEAT. Hold down the [SHIFT] key and one of the arrow [CRSR] keys and the cursor will move repeatedly in the direction (left or up) you have chosen.

DO NOT CONFUSE the [CRSR] keys with the nearby key that has a single arrow pointing up. This "up arrow" key has nothing to do with cursor control.

See also the CURSOR BACK command [SHIFT][SPACE BAR] which allows you to move the cursor to the left on the SCORE (5).

//

CURSOR RIGHT/DOWN -------------------- [CRSR keys]

SCORE (5): This commands uses the [CRSR] keys found below the [RETURN] key to move the cursor on the SCORE (5).

These keys move the cursor to the right OR down (see arrows on keys) respectively.

Movement in ONE direction at a time is possible. DO NOT hold down both [CRSR] keys simultaneously.

Both [CRSR] keys feature KEY REPEAT. Hold down one of these keys and the cursor will move repeatedly in the direction (right or down) you have chosen.

See also the CURSOR FORWARD command [SPACE BAR] which allows you to move the cursor to the right on the SCORE (5).

//

CURSOR TO VOICE 5 -------------------- [.] or [SHIFT][.]

SCORE (5): This command is given by typing the period [.] key or by typing [SHIFT][.] which is also known as "greater than" >. That is, for convenience, shifted and unshifted versions of the keystroke are equivalent.

The greater than > symbol is only a visual reminder of cursor movement.

The SCORE (5) displays two drum tracks, D1 and D2 at all times. It can display only FOUR of the eight musical voices V1-V8 at a time, however, EITHER the first four or the last four voices.

The SCORE (5) ordinarily "defaults" to display the FIRST FOUR voices, V1, V2, V3, and V4. You must give a command to see or work with the last four voices V5, V6, V7, and V8.

When the SCORE (5) displays the first four voices, type [.] OR [SHIFT][.] OR [>] to cause the cursor to move to voice five, V5. This command also necessarily causes the last four voices V5-V8 to be displayed.

Note that the cursor will always end up at V5, voice 5--the leftmost voice column on the screen--after the CURSOR TO VOICE 5 command [.] OR [>] is completed. This will be the case regardless of which column the cursor is in when the command is given.

In practical terms this command not only gives you easy access to the last four voices, but also makes it easy to go from one extreme cursor position (V4, voice 4, rightmost voice column displayed) to another (V5, voice 5, leftmost voice column displayed).

See also SHOW OTHER SCORE VOICES [?] OR [/] OR [SHIFT][/] command for a way to alternately display the first/last four SCORE (5) voices WITHOUT changing cursor position relative to the screen.

//

CURSOR TO VOICE 4 -------------------- [,] or [SHIFT][,]

SCORE (5): This command is given by typing the comma [,] key or by typing [SHIFT][,] which is also known as "less than" <. That is, for convenience, shifted and unshifted versions of the keystroke are equivalent.

The less than (symbol is only a visual reminder of cursor movement.

The SCORE (5) displays two drum tracks, D1 and D2 at all times. It displays only FOUR of the musical voices V1-V8 at a time, however, EITHER the first four or the last four voices.

The SCORE (5) ordinarily "defaults" to display the FIRST FOUR voices, V1, V2, V3, and V4. You must give a command to see or work with the last four voices V5, V6, V7, and V8. (See CURSOR TO VOICE 5 command [.]). And you must give a command to get BACK TO the first four voices.

While the SCORE (5) displays the LAST four voices, type [,] OR [<] to cause the cursor to move to V4, voice four. This command also necessarily causes the first four voices V1-V4 to be displayed.

Note that the cursor will always end up at V4, voice 4--the rightmost voice column on the screen--after the [,] OR [<] command is completed. This will be the case regardless of which column the cursor started in when the command was given.

In practical terms this command not only gives you easy return to the first four voices, but also makes it easy to go from one extreme cursor position (V5, voice 5, leftmost voice column displayed) to another (V4, voice 4, rightmost voice column displayed).

See also SHOW OTHER SCORE VOICES command [?] or [/] or [SHIFT][/] for a way to alternately display the first/last four SCORE (5) voices WITHOUT changing cursor position relative to the screen.

//

DELETE ALL ABOVE CURSOR ---------------- [INST DEL]

DRUMS (1): Use [SHIFT] and [SPACE BAR] keys to move the cursor to a column on the drum grid whose NUMBERS you wish deleted.

Type the [INST DEL] key.

The entire column above the cursor will be deleted, or completely emptied of numbers. This command does not delete the existence of a column, only the NUMBERS in it. A deleted drum column remains a column of blanks, or musical rests.

There is no way to instantly retrieve information that has been deleted by the DELETE ALL ABOVE CURSOR command [INST DEL]. Deleted numbers must be reentered normally. (The OOPS! command [SHIFT][O] does NOT work in a DRUMS (1) grid.)

See OOPS! command [SHIFT][O].

See also DELETE ENTRY (LEAVE BLANK) command [INST DEL] for the SCORE (5).

//

DELETE DRUM NUMBER -------------------- [D] then [1-8]

DRUMS (1): The DELETE DRUM NUMBER command [D] removes a single drum number from the column above the cursor.

Move the cursor to the column that has a number you wish to delete, or remove.

Type and release the [D] key.

Then type the single-digit numbered key from [1] through [8] that you want to delete.

Repeat as desired to delete other numbers in that column.

See also the alternative DELETE DRUM NUMBER command [0] then [1-8].

//

DELETE DRUM NUMBER -------------------- [0] then [1-8]

DRUMS (1): The DELETE DRUM NUMBER command [0] then [1-8] removes a single drum number from the column above the cursor each time the command is given.

Move the cursor to the column that has a number you wish to delete.

Type and release the zero key [0].

Then type the single-digit numbered key from [1] through [8] that is the number you want to delete.

Repeat as desired to delete several numbers in that column.

See also the alternative DELETE DRUM NUMBER command [D] then [1-8].

//

DELETE ENTRY (CLOSE UP) --------------- [D]

SCORE (5): This command deletes a SCORE (5) entry at the cursor position AND THE SPACE THAT THE ENTRY OCCUPIED.

That is, the DELETE ENTRY (CLOSE UP) command [D] does NOT leave a blank where the deleted entry stood. It "closes up" the SCORE (5) by deleting the space at the line and column where the cursor is when the command is given.

Therefore, the cursor will be found ONE LINE UP ON THE SCREEN (on the score line that is one number smaller) after the command is executed by the computer. That is, if you move the cursor to line 13 and type [D], the cursor will be at line 12 after the command is executed.

DELETING AN ENTRY: Suppose you have SCORE (5) entries on four CONSECUTIVE score lines (any column), say lines 12, 13, 14 and 15. Move the cursor to line 13 in that column and type [D]. Line 13 is deleted and the entries on lines 14 and 15 "close up" (move up one line on the screen) to occupy lines 13 and 14 respectively. The cursor will move to line 12, by virtue of the fact that the original space for line 13 was deleted by the [D] command.

Note that the score line NUMBER in the score is NOT deleted by this command! The ENTRY on a (permanent, indestructible) score line is deleted and other entries are moved! Also, NO entries are deleted in any other column: only entries in the column where the cursor is when the command is given.

RULE ABOUT SCORE LINES CLOSING UP: Deleting an entry among a group of entries on CONSECUTIVE lines will cause all CONTIGUOUS entries below the deleted entry to move up the screen one line. That is, there is a limit that dictates WHICH entries will move up. This command will move up entries found on consecutive, or contiguous score lines below the deleted entry until a BLANK score line is encountered in the same column.

That is, suppose you have entries on lines 12, 13, 14 and 18 (eighteen, not fifteen!), and you move the cursor to line 13 and type [D]. The entry on line 13 is deleted (as in any case). The entry that WAS on line 14 moves up to line 13. BUT, the entry on line 18 DOES NOT MOVE--because there was (at least) one blank line between lines 14-18 when the command was given.

DELETING A SPACE

Since this command deletes not only an entry, but the space it occupies, this command can be used to actually delete spaces in the SCORE (5) and "close up" entries. For instance, if you have an entry on line 12, a blank on 13, and entries on 14 and 15. Move the cursor to line 13 and type [D]. The blank line will be deleted and the entries that were on lines 14 and 15 will occupy lines 13 and 14 respectively. You've "closed" up the entries to delete the blank.

Obviously, you can use this command to move an entry "up" the screen (to a lower score line number). Put the cursor on the blank line that is immediately above the entry to be moved and type [D].

SUMMARY

The [D] command, when used on the SCORE (5), deletes the entry at the column and score line of cursor position and "closes up" entries on that column. Only entries on consecutive score lines below the deleted entry will "close up" by moving up a line. The first blank score line below the deleted line breaks the "moving up" of entries. It's easier to learn about through experience. Try it!

RESTORING A DELETED ENTRY

It is possible to retrieve an entry deleted by the DELETE ENTRY (CLOSE UP) command [D], and restore the entry to the original line, without destroying other entries, if you take these actions immediately:

MOVE THE CURSOR down one score line on the screen to the score line number whose entry was deleted.

Type [I] to insert a blank.

MOVE THE CURSOR up one score line on the screen. The cursor should now be on the score line where the deletion took place, facing a blank.

Type [SHIFT][O] to restore the deleted entry.

TO RESTORE AN ENTRY TO ITS ORIGINAL POSITION, cursor movement is necessary, because the cursor DOES NOT end up on the same score line it started on after the DELETE ENTRY (CLOSE UP) command [D] is completed. Note that the [I] command causes a change in cursor position following its completion also.

Moving the cursor is OK, but don't give another command except OOPS! or you will lose the deleted entry forever.

See also the INSERT SPACE AT CURSOR command [I].

See also the OOPS! command [SHIFT][O].

See also DELETE ENTRY (LEAVE BLANK) command [INST DEL] for comparison.

//

DELETE ENTRY (LEAVE BLANK) ------------ [INST DEL]

SCORE (5): The DELETE ENTRY (LEAVE BLANK) command [INST DEL] simply erases the entry at the position of the cursor in the SCORE (5) and leaves a blank. No other score line is affected.

That is, this command affects only the entry on the score line and column where the cursor is when the command is given.

THE CURSOR DOES NOT MOVE AS A RESULT OF THIS COMMAND.

Move the cursor to the score line and column of the entry to be deleted and type the [INST DEL] key. A blank appears where the entry used to be.

Since [INST DEL] does NOT cause a change of cursor position, the deleted entry can be retrieved with an immediate OOPS! command [SHIFT][O].

However, you can [INST DEL] an entry, and CHOOSE to move the cursor, and then type [SHIFT][O] and the deleted entry will reappear at the new cursor position--a handy way to transport an entry to another position in the SCORE (5).

See also the OOPS! command [SHIFT][O].

See also the DELETE ENTRY (CLOSE UP) command [D] for a different way to delete SCORE (5) entries.

//

DELETE NOTE/REST ---------------------- [D]

EDIT MUSIC (3): The DELETE NOTE/REST command [D] deletes the note or rest above the cursor when the command is given.

No space is created; the EDIT MUSIC (3) segment is closed up. The barline positions for ALL measures to the right of the cursor are affected, not simply the measure in which the command is given.

That is, the EDIT MUSIC (3) segment automatically rebars all measure(s) that follow a deleted note or rest to account for the duration of the deleted note/rest.

Move the cursor to the note/rest in an EDIT MUSIC (3) segment you wish to delete and type [D].

The note/rest above the cursor is deleted and the notes/rests to the right of the cursor move left to fill the void. All barlines will be automatically adjusted to account for the loss of the note value (quarter, sixteenth, etc.) deleted.

This command creates NO change of barlines when used to delete the MOST RECENT (last) note entered, since there are no notes to the right of that note!

Use of the DELETE NOTE/REST command [D] is best restricted to removing a note/rest you do NOT wish to replace.

That is, if you want to REPLACE a note/rest, simply put the cursor on that note/rest and enter the NEW note/rest and/or duration. The new note will "overwrite" the old note and take its place. It is possible to enter any note with any duration in this manner. (New note name and note/rest duration do NOT have to be the same as the old name and duration.

The DELETE NOTE/REST command [D] is USEFUL when you want to delete SEVERAL notes/rests from an EDIT MUSIC (3) segment. Rather than moving the cursor to each note to be deleted in turn, simply move the cursor to the LEFTMOST note/rest of a series to be deleted. Type [D] as many times as necessary to delete the entire series. The cursor will sit still and "pull in" notes/rests right of the cursor--one for each time you type [D].

DELETING TIED NOTES

Since the DELETE NOTE/REST command [D] deletes "one" note or rest it is important to understand how the computer defines "one" note or rest. Usually, one note/rest is exactly as displayed. In some cases, such as tied notes, the computer sees a GROUP of notes as "one" note. The cursor will "skip" over individual notes in such a group of tied notes, a sure sign that it defines the group as "one" note. Any number of tied notes will be deleted by placing the cursor at the LEFTMOST note and typing [D] once. Once again, it usually makes more sense to simply replace the note, overwriting it using normal entry, instead of using the [D] command.

PROGRAMMING/DELETING COMPOUND RESTS

Groups of rests, the so-called "compound" rest, can be programmed AT YOUR OPTION (to save computer memory) by "adding" rests. To do this, you may type SEVERAL number [1-9-0] keys before typing [R] to enter the rest. Such a group is "one" rest in the computer's frame of reference. The cursor will again indicate what it "sees," by "skipping" over individual rests when the compound rest is entered. The entire group can be deleted using the [D] command. Place the cursor on the leftmost element of the group and type [D].

To learn how to insert a note within an EDIT MUSIC (3) segment, see the INSERT NOTE/REST command [I].

To change a note's pitch without changing its duration, see use of the REPLACE NOTE command [↑].

//

DELETE TRANSPOSE NOTE ---------------- [INST DEL]

TRANSPOSE (2): The DELETE TRANSPOSE NOTE command [INST DEL] deletes the last note of a TRANSPOSE (2) segment.

This command can be repeated to successively delete the "last note" until the TRANSPOSE (2) segment is completely blank.

See also CLEAR SEGMENT command [SHIFT][CLR HOME] which is used to clear DRUMS (1), EDIT MUSIC (3) and RECORD MUSIC (4) segments.

See also the TRANSPOSE (2) section in MENU MODES in this dictionary.

//

DISPLAY FLATS ------------------------- [SHIFT][%]

EDIT MUSIC (3): THIS COMMAND FUNCTIONS ONLY WHEN AN EDIT MUSIC (3) SEGMENT IS ON THE SCREEN. The DISPLAY FLATS command [SHIFT][%] causes the display to express accidentals (black keys on the keyboard) as flats.

For instance, the black key immediately above Middle C will be displayed as the note D-flat, rather than C-sharp.

THE COMMAND IS GLOBAL

Its use, when an EDIT MUSIC (3) segment is on the screen, will cause NOT ONLY all EDIT MUSIC (3) segments, BUT all TRANSPOSE (2) segments as well to be displayed using flats until the DISPLAY SHARPS command [SHIFT][#] is given. Flats and sharps can NOT be displayed together on any EDIT MUSIC (3) or TRANSPOSE (2) segment.

Display of accidentals is global among segment modes: If you use the DISPLAY FLATS command [SHIFT][%] when any EDIT MUSIC (3) segment is on the screen to display flats for any EDIT MUSIC (3) segment, all EDIT MUSIC (3) segments and all TRANSPOSE (2) segments for that song will NOW display accidentals using flats.

The change is reversed by using the DISPLAY SHARPS command [SHIFT][#]. In addition, any change in display of accidentals caused by entering notes in a TRANSPOSE (2) segment will be reflected in all EDIT MUSIC (3) segments as well as all other TRANSPOSE (2) segments. See ENTER TRANSPOSE NOTE (COMPUTER) command.

See also the DISPLAY SHARPS command [SHIFT][#].

//

DISPLAY SHARPS ------------------------- [SHIFT][#]

EDIT MUSIC (3): THIS COMMAND FUNCTIONS ONLY WHEN AN EDIT MUSIC (3) SEGMENT IS ON THE SCREEN. The DISPLAY SHARPS command [SHIFT][#] causes the display to express accidentals (black keys on the keyboard) as sharps.

For instance, the black key immediately above Middle C will be displayed as the note C-sharp, rather than D-flat.

THE COMMAND IS GLOBAL

Its use, when an EDIT MUSIC (3) segment is on the screen, will cause NOT ONLY all EDIT MUSIC (3) segments, BUT all TRANSPOSE (2) segments as well, to be displayed using sharps until the DISPLAY FLATS command [SHIFT][%] is given. Sharps and flats may NOT be displayed together on ANY segment.

Also, display of segments is global among segment modes: if you use the DISPLAY SHARPS command [SHIFT][#] to display sharps on any EDIT MUSIC (3) segment, all MUSIC

(3) segments and ALL TRANSPOSE (2) segments will NOW display accidentals in sharps.

The change is reversed by using the DISPLAY FLATS command [SHIFT][%]. In addition, any change in display of accidentals caused by entering notes in a TRANSPOSE (2) segment will be reflected throughout all EDIT MUSIC (3) segments as well as all other TRANSPOSE (2) segments. See ENTER TRANSPOSE NOTE (COMPUTER) command.

See also the DISPLAY FLATS command [SHIFT][%].

//

DRUM PAGE RETURN --------------------- [D]

DRUMS (1) MIDI DRUM SONGSTEPPER ONLY: The DRUM PAGE RETURN command [D] is used only after giving the MIDI DRUM ASSIGN command [M].

(This [M] command is used to assign MIDI numbers and volumes to the numbers 1-8 used on the DRUMS (1) grid in MIDI DRUM SONGSTEPPER.)

The DRUM PAGE RETURN command [D] is simply a way to get BACK to the DRUMS (1) segment that was the departure point when the [M] command was given.

The [D] command will function ONLY when the screen shows:

SCREEN PROMPTS:	YOUR RESPONSE:
DRUM - TRACK D -	type [D]

When in the midst of assigning MIDI numbers/volumes using the MIDI DRUM ASSIGN command [M], it may be necessary to type [RETURN] several times until the screen prompt appears as above, with a specific DRUM number "-" from 1-8, and a specific TRACK D "-" track 1 or 2.

WHEN THE PROMPT SHOWS AS ABOVE, type [D]. The screen will now return you to the DRUMS (1) segment that was on display when you gave the MIDI DRUM ASSIGN command [M]. The system will automatically save to memory MIDI number/volume assignment numbers as you left them.

See also MIDI DRUM ASSIGN command [M] for a full discussion of how each number on the MIDI DRUM SONGSTEPPER DRUMS (1) grid may be assigned (and stored for each different song) to play one of 16 different MIDI drum sounds, each with its independent associated volume, or loudness.

See also the AT DRUM TRACK command [@] for related DRUMS (1) segment information.

//

EDIT RECORD MUSIC ---------------------- [E]

RECORD MUSIC (4): The EDIT RECORD MUSIC command [E] transforms an AUTOCORRECTED RECORD MUSIC (4) segment into an EDIT MUSIC (3) segment, and displays it on the screen so you can edit, or change the music.

Only an AUTOCORRECTED RECORD MUSIC (4) segment can be changed into an EDIT MUSIC (3) segment. That is, an original RECORD MUSIC (4) performance that has NOT been autocorrected is NOT eligible for this transformation; the [E] command will be inoperative.

When you wish to edit a RECORD MUSIC (4) segment, AUTOCORRECT it to any number you wish, then type [E]. The screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
RELATIVE TO SEGMENT CLOCK 1: -- BEATS/MEASURE IS?	type [1-32] then [RETURN]

Let's ignore your response for the moment and look at the prompt. The prompt displays your choice of autocorrect number "1:--" and will fill in that number where we show the dash(es).

YOUR RESPONSE to the prompt, the number YOU enter, will determine how the EDIT MUSIC (3) segment displayed will b NOTATED. This will determine how many quarter notes, or BEATS it will take to create a measure. Your RESPONSE to the prompt determines where the barlines will fall on the EDIT MUSIC (3) segment, and therefore how many measures will be expressed.

TRANSFORMATION IS ONE-WAY

The successful [E] command is final. You can NOT transform the EDIT MUSIC (3) segment back into the RECORD MUSIC (4) segment from which it was transformed. COPY YOUR RECORD MUSIC (4) SEGMENT USING THE COPY SEGMENT command [=] SO YOU DON'T LOSE IT!

RESOLUTION

Every transformation of a RECORD MUSIC (4) segment to an EDIT MUSIC (3) segment necessarily involves some loss of resolution (smallest note value that can be distinguished), since all RECORD MUSIC (4) segments are recorded at a resolution of 128 "time slices" per whole note, and the best resolution an EDIT MUSIC (3) segment can have is 64th notes. So, the smallest autocorrect number, 1, represents 64 "slices" per whole note--64th notes.

Remember, only an RECORD MUSIC (4) segment that is CURRENTLY AUTOCORRECTED will respond to the EDIT RECORD MUSIC command [E].

//

END DRUMS SEGMENT -------------------- [E]

DRUMS (1): The END DRUMS SEGMENT command [E] is used to define the END of a DRUMS (1) segment.

Move the cursor to the LAST column that is PART OF your DRUMS (1) segment and type [E]. This defines the END of that DRUMS (1) segment.

The END column of your DRUMS (1) segment will now display the "triangles" graphic. You can put numbers into the END column; they will share the space with the triangles graphic.

TO REDEFINE, OR CHANGE THE "END" OF A DRUMS (1) SEGMENT, YOU HAVE TWO CHOICES:

TO SHORTEN A DRUMS (1) SEGMENT

Place the cursor in ANY column BEFORE the END column and give the END DRUMS SEGMENT command [E].

The END triangles will appear at THAT column (over the cursor), and the triangles in the previous END column will disappear.

TO LENGTHEN A DRUMS (1) SEGMENT

Place the cursor under the END column, the one with the triangles.

ERASE the END column triangles by giving the ERASE END DRUMS SEGMENT command [SHIFT][E]. That is, type and hold the [SHIFT] key, then type [E].

Move the cursor to ANY column to redefine the END of the DRUMS (1) segment by once again giving the END DRUMS SEGMENT command [E].

THE CURSOR WILL NOT GO PAST THE COLUMN THAT DISPLAYS THE END COLUMN "TRIANGLES." To LENGTHEN a DRUMS (1) segment, you have NO CHOICE: you MUST ERASE the existing END triangles. See the ERASE END DRUMS SEGMENT command [SHIFT][E] dictionary entry immediately below.

Once the END column triangles have been erased, you may CHOOSE to shorten OR lengthen the segment by putting the END of the DRUMS (1) segment in ANY column, using the END DRUMS SEGMENT command [E].

THE END OF EACH DRUMS (1) SEGMENT MUST BE DEFINED.

Either you do this by giving the [E] command, or the COMPUTER DOES SO BY DEFAULT WHEN IT SAVES THE SEGMENT TO MEMORY. In this case, the computer interprets the RIGHTMOST COLUMN to which you moved the CURSOR as the END of that segment.

It is good practice to consciously END your segments with this [E] command, since you may forget how far you moved the cursor. In any case, the "triangles" graphic WILL be displayed after a DRUMS (1) segment has been saved to memory.

A DRUMS (1) segment does NOT have to be a complete musica measure, or bar. Segment length is up to you, which lets you play more-complicated musical games.

Since a DRUMS (1) segment may occupy SEVERAL video pages, the END of the segment does NOT necessarily appear on the first video page. That is, the VIDEO PAGE that displays a portion of a DRUMS (1) segment will NOT necessarily display the END of the segment.

IT is NOT the VIDEO PAGE that requires an END. It is the DRUMS (1) segment that requires an END. The END of a DRUMS (1) segment will ALWAYS be found on the LAST video page of the segment.

DRUM SEGMENT MAXIMUM LENGTH

Any single DRUMS (1) segment can have no more than 240 columns. The cursor will simply refuse to go past the 240TH column. The END column will be the 240TH column in this case, and the triangles will be displayed in that column following a save to memory.

//

ERASE END DRUMS SEGMENT --------------- [SHIFT][E]

DRUMS (1): The ERASE END DRUMS SEGMENT command [SHIFT][E] is used to erase the END triangles graphic on a DRUMS (1) segment.

Place the cursor under the END column (the one that has the triangles).

Hold the [SHIFT] key down and type [E].

THE END triangles will be erased, signifying erasure of the END of the segment.

Remember to properly END the DRUMS (1) segment after you erase its current END. Use the END DRUMS SEGMENT command [E].

If you fail to END a DRUMS (1) segment, the computer wil END it for you! (see END DRUMS SEGMENT command [E] above).

Do NOT give the ERASE END DRUM SEGMENT command [SHIFT][E] unless the cursor is directly under the END column that has triangles. If you do, the END triangles may be put into an unexpected column. This would become apparent after the segment is saved to memory.

ERASE any unwanted END column through proper use of the ERASE END DRUM SEGMENT command [SHIFT][E].

//

ENTER DRUM NUMBER ---------------------- [1-8]

DRUMS (1): The numbered keys [1] through [8] are used to enter numbers directly onto the grid of a DRUMS (1) segment.

PROGRAMMING THE DRUMS (1) SEGMENT WITH NOTES

Place a DRUMS (1) segment on the screen.

Move the cursor to the column into which you would like to enter number(s).

Type keys [1] through [8] as desired to enter number(s) in that column of the grid.

NOTE: ENTER A MAXIMUM OF SEVEN NUMBERS FOR ANY DRUMS (1) SEGMENT GRID COLUMN. Each column should have at least ONE blank cell.

THE CURSOR WILL NOT AUTOMATICALLY SCROLL TO THE "NEXT" VIDEO PAGE WHEN A VIDEO PAGE IS COMPLETELY PROGRAMMED. You must give the GO TO NEXT DRUM PAGE command [.] to go to the next higher numbered video page to continue programming.

THE MAXIMUM LENGTH FOR ANY SINGLE DRUMS (1) SEGMENT IS 240 GRID COLUMNS.

GRID NUMBERS REPRESENT SOUNDS

What do the numbers on the grid MEAN? In SONGSTEPPER (choice 1 on the MASTER MENU), a number on the DRUMS (1) grid simply means that a "trigger" will be delivered to the DRUM TRIGGER OUTS jack that has the SAME number at the appropriate time as programmed on the grid. The sound produced depends strictly on the device(s) you have connected to that numbered DRUM TRIGGER OUTS jack.

In MIDI DRUM SONGSTEPPER, (choice 4 on the MASTER MENU), a number on the DRUMS (1) grid outputs a MIDI drum number and MIDI volume number through the W-OUT MIDI output. That is, bus W.

Drum machine manufacturers have associated a MIDI number with a specific drum sound.

Each number 1-8 on a DRUMS (1) grid can be assigned by you, using the MIDI DRUM ASSIGN command [M], to represent a different MIDI number. So, any one of various drum sounds could be produced when you place a particular number on the DRUMS (1) grid in MIDI DRUM SONGSTEPPER. These drum assignments are stored as part of your song's information, so it is possible to have different percussion assignments for each song in MIDI DRUM SONGSTEPPER.

RESTS--SILENCES IN MUSIC

A blank on the DRUMS (1) grid is a rest. Rests must be explicitly programmed on EDIT MUSIC (3) segments. That is, a rest must be ENTERED on an EDIT MUSIC (3) segment.

See also MIDI DRUM ASSIGN command [M].

See especially the AT DRUM TRACK command [@].

//

ENTER NOTE/REST (COMPUTER) ------------ [*] then [3-6]
then [A-G] then
if necessary,

type [SHIFT][#]
or [SHIFT][%]

type [1-9-0]
then [RETURN]

EDIT MUSIC (3): It is possible to create EDIT MUSIC (3) segments in SONGSTEPPER or MIDI DRUM SONGSTEPPER using ONLY the computer keyboard. Notes and rests can be "spelled out" using numbers, letters and symbols to express any note or rest that is permitted.

THE ENTRY OF EACH NOTE MUST BE PRECEDED BY TYPING [*] WHEN USING ONLY THE COMPUTER KEYBOARD.

TO ENTER A NOTE:

First type the [*] key.

Then type [3-6], the note's octave number: [3] represents the notes from C upwards to B in the octave BELOW middle C; [4] represents the notes from middle C to the B above it; and [5] represents the notes from C up to B starting on the C one octave ABOVE middle C. ONLY ONE NOTE MAY BE ENTERED IN THE [6] OCTAVE. The C TWO octaves above middle C is represented by [6] for octave number. That is, "6C" is the highest note that can be entered using this notation.

Then type [A-G], the single letter name of the note, alphabetically from [A] through [G]. These are the same letters as the white notes on the keyboard: C, D, E, F, G, A, B, and repeat.

If the note is a BLACK note on the keyboard, enter the "accidental" sharp or flat. A sharp is the black note immediately ABOVE a white key. A flat is the black note immediately BELOW a white key. C-sharp and D-flat are the same note on the synthesizer or piano keyboard. Type

[SHIFT][#] for sharp; and [SHIFT][%] for flat. Note that entry of either accidental is a two-key command that requires the [SHIFT] key. Skip this step if the note is not a black key.

BE CONSISTENT. BOTH SHARPS AND FLATS MAY NOT BE DISPLAYED IN THE SAME SEGMENT, NOR INDEED, THE SAME SONG IN THIS SYSTEM.

Then, enter the single digit from [1-9-0] appropriate for the intended DURATION: [1] displays ONE sixteenth note; [2] is equivalent to TWO sixteenth notes (eighth note); [3] equals THREE sixteenth notes (dotted eighth); [4] equal FOUR sixtenth notes (quarter note); and so forth through [9]. Type [0] for a whole note (16 sixteenth notes).

DURATION CAN BE ADDITIVE

That is, you can type more than one numbered key to add durations to create a note with greater duration. For instance, if you type [3] then [2] before typing [RETURN] the duration of the note will be 5 sixteenths (3+2), which is usually displayed as a quarter note tied to a sixteenth.

This system gives you the simplicity of having basic duration values on separate keys AND the power to create notation/duration as you wish by adding these keys to each other. The display will show the duration number of the LAST key you struck--NOT THE TOTAL. It's up to you to keep track. If you make a mistake, go ahead and enter the note. Then use [SHIFT][SPACE BAR] to back the cursor up, and reenter correctly.

TO ENTER the note, type [RETURN].

TO ENTER the note with a slur/tie mark, type [S]. See also the SLUR/TIE command [S].

APPEARANCE OF NOTES ON SCREEEN

Notice that the notes you enter BELOW middle C are displayed on the screen ABOVE middle C with the "inverted caret" symbol. This symbol indicates that a note SOUNDS an octave lower than displayed on the TREBLE CLEF (G CLEF) musical staff on the screen.

TRANSPOSITION AND EDIT MUSIC (3) PITCH SPAN

Obviously, an EDIT MUSIC (3) segment is restricted to a three octave PITCH SPAN.

But, neither SONGSTEPPER nor MIDI DRUM SONGSTEPPER is restricted to an overall PITCH SPAN that is only three octaves wide. When an EDIT MUSIC (3) segment is actually PLAYED by the SCORE (5), it may be TRANSPOSED. To TRANSPOSE means to raise or lower, by the same musical interval, the pitch of all notes in a musical passage.

All EDIT MUSIC (3) and RECORD MUSIC (4) segments entered in the SCORE (5) may be transposed.

So, it is true that the largest INTERVAL that an EDIT MUSIC (3) segment can express is THREE OCTAVES. However, that EDIT MUSIC (3) segment can be transposed to blubber in the bass range, or squeak in the soprano, using the TRANSPOSE (2) mode. See the ENTER TRANSPOSE NOTE (COMPUTER) command for details.

TO ENTER A REST:

Type the number from [1-9-0] that represents the duration of the rest. As with note entry, [1] equals one sixteenth, [2] two sixteenths, and so forth. [0] is a whole rest. RESTS ARE ADDITIVE, just like notes (see explanation above).

Type [R] to enter the rest.

THE VIDEO PAGE AND CURSOR MOVEMENT

When a video page is completely programmed with notes/rests, the cursor will refuse to move forward. That is, the cursor does NOT "scroll" forward automatically to the next higher numbered video page.

When you reach the end of a video page on an EDIT MUSIC (3) segment, you must give the GO TO NEXT MUSIC PAGE command [.], by typing the period key. This command takes you to the next higher numbered video page, where you may continue entering notes/rests.

MAXIMUM EDIT MUSIC (3) SEGMENT LENGTH

An EDIT MUSIC (3) segment may be no more than 120 "events" long.

> Any entry made using the [RETURN] key is worth TWO events. For example a note with no slur/tie mark.
>
> Any entry made using the [S] key is worth ONE event. For example a note with a slur/tie mark.
>
> Any entry made using the [R] key is worth ONE event. For example any rest, including a compound rest made by striking several number keys to add up a duration.

The cursor will not move forward past the 120 event limit.

THE CURSOR WILL NOT AUTOMATICALLY SCROLL FORWARD AT THE END OF A VIDEO PAGE.

THE CURSOR CANNOT MOVE PAST THE 120 EVENT LIMIT WITHIN AN EDIT MUSIC (3) SEGMENT.

WHEN YOU MAKE AN MISTAKE:

Like typing [*] when you did NOT want to enter a note or rest: type any allowable note's octave/letter, e.g. 4C. Then type [D]. THE ASTERISK * DISAPPEARS. THIS IS THE WAY TO ESCAPE WHEN THE * ASTERISK IS ON THE SCREEN AND YOU DO NOT WISH TO ENTER A NOTE/REST.

Like typing the WRONG note octave number or letter: type [INST DEL] and type the correct number and letter. THE * ASTERISK REMAINS, AND YOU CAN ENTER THE CORRECT NOTE/REST NOW.

Like typing [*] and a note octave/letter, then deciding you wanted to make a REST rather than a note: Just ignore the note octave/letter, and enter the correct duration for the REST you intended (e.g. [8]) then hit [R] instead of [RETURN]. The rest will appear instead of the note.

Like entering a note with the WRONG DURATION: put the cursor under the note (back up using [SHIFT][SPACE BAR] and reenter. The system has a PITCH BUFFER that remembers the LAST pitch (octave, note, etc.) entered. If that is the SAME as the note currently above the cursor, type the new DURATION only, and enter using [RETURN].

Like entering a note with the WRONG PITCH: put the cursor under the note and reenter. The system also has a DURATION BUFFER that remembers the LAST duration entered. If that duration is the same as the note currently above the cursor, type [*], then the new PITCH octave/letter/accidental only, and enter using [RETURN]. The DURATION BUFFER will supply whatever duration it last saw. If you immediately correct the last note of the segment as you program it, the duration of the last note and the duration in the DURATION BUFFER will obviously be the same.

Like entering a rest with the wrong duration: put the cursor under the rest (back up using [SHIFT][SPACE BAR] and reenter rest duration. ENTER REST BY TYPING [R].

See also the REPLACE NOTE command [↑].

//

ENTER NOTE/REST (MIDI) ---------------- play keyboard
type [1-9-0]
then [RETURN]

EDIT MUSIC (3): SONGSTEPPER and MIDI DRUM SONGSTEPPER both let you enter a pitch (within certain octave limits) by playing a MIDI keyboard rather than using the computer keyboard.

You enter the DURATION of a note on the computer keyboard for an EDIT MUSIC (3) segment, however.

First, check to see that the MIDI keyboard used for note entry is connected to the SONG PRODUCER. Connect the keyboard's MIDI OUT to the SONG PRODUCER MIDI IN.

Play and release (you don't have to hold the key down) a note on the MIDI keyboard within the ALLOWABLE RANGE from C one octave below middle C through C two octaves above middle C.

Type the note's duration using the numbered keys from [1-9-0]. Type [1] to make your note ONE sixteenth; [2] for TWO sixteenths, or an eighth note; and so forth through [9]. [0] is a whole note. (see discussion for the ENTER NOTE/REST (COMPUTER) command above).

Type [RETURN] to enter the note.

Type [S] to enter the note with a slur/tie mark. See the SLUR/TIE command [S].

APPEARANCE OF NOTES ON SCREEEN

Notice that the notes you enter BELOW middle C are displayed on the screen ABOVE middle C with the "inverted caret" symbol. This symbol indicates that a note SOUNDS an octave lower than it is displayed on the TREBLE CLEF (G CLEF) musical staff on screen.

TRANSPOSITION AND EDIT MUSIC (3) PITCH SPAN

Obviously, an EDIT MUSIC (3) segment is restricted to a three octave PITCH SPAN.

But, neither SONGSTEPPER nor MIDI DRUM SONGSTEPPER is restricted to an overall PITCH SPAN that is only three octaves wide. When an EDIT MUSIC (3) segment is actually PLAYED by the SCORE (5), it may be TRANSPOSED. To TRANSPOSE means to raise or lower, by the same musical interval, the pitch of all notes in a musical passage. All EDIT MUSIC (3) and RECORD MUSIC (4) segments entered in the SCORE (5) may be transposed.

So, it is true that the largest INTERVAL that an EDIT MUSIC (3) segment can express is THREE OCTAVES. However, that EDIT MUSIC (3) segment can be transposed to blubber along in the bass range, or squeak in soprano, using the TRANSPOSE (2) mode. See the ENTER TRANSPOSE NOTE (COMPUTER) command for details.

TO ENTER A REST:

To enter a rest, first type the key(s) [1-9-0] appropriate for the DURATION desired. Rest duration is additive, like note duration (see discussion for the ENTER NOTE/REST (COMPUTER) command above.

Then type [R] to enter the rest.

See also the ENTER NOTE/REST (COMPUTER) command immediately above.

SPEEDY ENTRY: PITCH & DURATION BUFFERS

A DURATION BUFFER remembers the LATEST duration you programmed on the computer keyboard.

To enter a string of notes (any pitches), each with the SAME DURATION, enter the first note of the string as shown above.

Then play the next PITCH to be entered in the string on the MIDI keyboard and type [RETURN]. The DURATION BUFFER supplies the same duration for until you program a new duration.

REPEAT FOR EACH NOTE OF THE ENTIRE STRING. Change DURATION programming only when you WANT a new duration.

Type [R] to enter a REST having the duration that is stored in the DURATION BUFFER.

A PITCH BUFFER remembers the LATEST pitch you played on the MIDI keyboard.

To enter a string of notes, each with the SAME PITCH (any duration), enter the first note as shown above.

Then enter the next DURATION in the string on the computer keyboard and type [RETURN]. The PITCH BUFFER supplies the SAME pitch until you enter a new pitch.

REPEAT FOR EACH DURATION IN THE ENTIRE STRING. Change PITCH programming when you want a new pitch.

TYPE [RETURN] TO REPEAT A NOTE WITH BOTH THE PITCH AND THE DURATION VALUE CURRENTLY STORED IN THE PITCH AND DURATION BUFFERS.

TO ENTER A REST HAVING THE DURATION STORED IN THE DURATION BUFFER, TYPE [R].

THE VIDEO PAGE AND CURSOR MOVEMENT

When a video page is completely programmed with notes and rests, the cursor will refuse to move forward. That is, the cursor does NOT "scroll" forward automatically to the next higher numbered video page.

When you reach the end of a video page on an EDIT MUSIC (3) segment, you must give the GO TO NEXT MUSIC PAGE command [.], by typing the period key. This command takes you to the next higher numbered video page, where you may continue entering notes/rests.

MAXIMUM EDIT MUSIC (3) SEGMENT LENGTH

An EDIT MUSIC (3) segment may be no more than 120 "events" long.

> Any entry made using the [RETURN] key is worth TWO events. For example a note with no slur/tie

mark.

Any entry made using the [S] key is worth ONE event. For example a note with a slur/tie mark.

Any entry made using the [R] key is worth ONE event. For example any rest, including a compound rest made by striking several number keys to add up a duration.

The cursor will not move forward past the 120 event limit.

THE CURSOR WILL NOT AUTOMATICALLY SCROLL FORWARD AT THE END OF A VIDEO PAGE.

THE CURSOR CANNOT MOVE PAST THE 120 EVENT LIMIT WITHIN AN EDIT MUSIC (3) SEGMENT.

//

ENTER REST ---------------------------- [1-9-0] then [R]

EDIT MUSIC (3): Entering a rest in an EDIT MUSIC (3) segment requires use of the computer keyboard.

First type [1-9-0], the numbered key or keys on the computer keyboard that represent the duration of the rest.

Then type [R] to enter the rest on the display.

See also the two preceding entries in this dictionary for a complete discussion.

THE COMPOUND REST

When a rest is created by striking a numbered key or keys more than once to "add" up a rest, it is referred to as a "compound" rest. Such a rest uses less computer memory, since it is "seen" by the computer as "one" rest, even though it is displayed as several rests.

Compound rests are easy to spot; the cursor will skip from the beginning of a compound rest to its end, or vice versa, as you move the cursor over the rest.

The disadvantages of compound rests are: they are displayed using nonstandard practice: the group of rests is always displayed starting with the largest duration through the smallest. For people who are sensitive to the rules of standard notation, this may not fit the sense of the musical passage in which the rest occurs. A compound rest is more difficult to edit. Individual elements cannot be deleted using [D].

For these reasons, we have made it possible for you to enter INDIVIDUAL RESTS exactly as you wish, using an individual [R] for each individual duration choice among keys [1] through [0]. The choice of how you handle rests is up to you!

Individual entry DOES use more computer memory. Compound or additive entry is slightly less proper visually, but has no effect on sound, whatsoever.

THE VIDEO PAGE AND CURSOR MOVEMENT

When a video page is completely programmed with notes/rests, the cursor will refuse to move forward. That is, the cursor does NOT "scroll" forward automatically to the next higher numbered video page.

When you reach the end of a video page on an EDIT MUSIC (3) segment, you must give the GO TO NEXT MUSIC PAGE command [.], by typing the period key. This command takes you to the next higher numbered video page, where you may continue entering notes/rests.

MAXIMUM EDIT MUSIC (3) SEGMENT LENGTH

An EDIT MUSIC (3) segment may be no more than 120 "events" long.

> Any entry made using the [RETURN] key is worth TWO events. For example a note with no slur/tie mark.
>
> Any entry made using the [S] key is worth ONE event. For example a note with a slur/tie mark.
>
> Any entry made using the [R] key is worth ONE event. For example any rest, including a compound rest made by striking several number keys to add up a duration.

The cursor will not move forward past the 120 event limit.

THE CURSOR WILL NOT AUTOMATICALLY SCROLL FORWARD AT THE END OF A VIDEO PAGE.

THE CURSOR CANNOT MOVE PAST THE 120 EVENT LIMIT WITHIN AN EDIT MUSIC (3) SEGMENT.

//

ENTER SECTION TO PLAY ---------------- [1-9] then [S]
[1-8] then
[A-M] or [A-O]

for example to enter "section 8M played nine times":
[9] then [S]
[8] then [M]

The entry will appear on the SCORE (5) in the following format:

9* 8M

SCORE (5): WHEN YOU MAKE AN ENTRY ON THE SCORE (5), IT APPEARS TO THE IMMEDIATE RIGHT OF THE CURSOR.

When you wish to enter a section on the SCORE (5) to play it, a section HEADING by the name you call must have been previously created elsewhere on the SCORE (5). See ENTER SECTION HEADING command.

The first number you type to ENTER A SECTION TO PLAY, e.g. [9] tells the computer HOW MANY TIMES you want to play the section to be selected. THE RANGE IS FROM 1-9.

Type the letter [S] next, to indicate that you wish to play a Section.

Now type the HEADING, OR NAME OF THE SECTION, ALWAYS BY NUMBER FIRST, THEN BY LETTER ([8] then [M] in this example). The section number ranges from 1-8. The letter range is from A through M for MIDI DRUM SONGSTEPPER; A through O for SONGSTEPPER.

IF YOU PROVIDE A SECTION NAME THAT IS NOT TO BE FOUND ON A SECTION HEADING SOMEWHERE ON THE SCORE (5), THE SYSTEM WILL REFUSE TO ENTER THE FICTICIOUS NAME, AND BLANK OUT YOUR ENTRY!

If you make a mistake, use the [INST DEL] key to delete the entry, or simply watch the screen and make entries until the entry space goes blank. Then enter the information properly.

ALLOWABLE SECTION CALLS

You may "cross-call" sections with different numbers in their name. If the cursor is on column 6 you can call data from column 4 of a section "B", putting it in column 6. Simply type [4] as the number, then the section's letter name [B].

Cursor position determines where information is PLACED. Your entries at that cursor position determine from which column of which section the information is OBTAINED.

CALLING A SECTION SEVERAL TIMES DOES NOT DESTROY THAT SECTION OR REMOVE IT FROM IT ORIGINAL LOCATION. SECTIONS MAY BE CALLED REPEATEDLY WITHIN SCORE (5) LIMITS.

CALLING A SECTION TAKES UP ONLY A SINGLE SCORE LINE ON ONE COLUMN IN THE SCORE (5). That single entry may call a section that comprises many different segments. See also ENTER SEGMENT command.

Note: the computer assigns numbers to section columns automatically AT THE TIME YOU ACTUALLY CREATE A SECTION HEADING. See dictionary entry below.

//

ENTER SECTION HEADING ---------------- [S] then
[A-M]
or [A-O]

SCORE (5): To create a HEADING on the SCORE (5) NAMING a section:

Type [S] for Section.

Type a single letter key [-], from [A]-[M] in MIDI DRUM SONGSTEPPER, or [A]-[O] in SONGSTEPPER.

A SOLID BAR BEARING THE SECTION NAME WILL APPEAR. THE COMPUTER WILL SUPPLY THE COLUMN NUMBER, WHICH, FOLLOWED BY YOUR LETTER, BECOMES THE NAME. FOR EXAMPLE, 4M IS A VALID NAME IN A SECTION HEADING.

IMPORTANT NOTE: A SOLID BAR, OR SECTION HEADING, STOPS THE SCORE (5) FROM READING FURTHER DOWN THE COLUMN IN WHICH THE SOLID BAR APPEARS. KEEP SECTION HEADINGS ON A DIFFERENT PART OF THE SCORE (5) THAN THE PART YOU ACTUALLY "PLAY." YOU PLAY SECTIONS BY "CALLING THEM." SEE DICTIONARY ENTRY ABOVE.

THIS IS IMPORTANT: A section is NAMED when you type a SINGLE LETTER, and the computer provides the column number of cursor position as part of the name.

The information in section 2A is not necessarily the same as in 4A. Each occupies a different column with possibly different entries. So, BOTH number and letter identify a section. In a sense, a section can be 8 sectionettes that share the same letter.

You supply the LETTER name of a section. The column number is the NUMBER of the section, automatically assigned by the computer.

SECTION NAMES NUMBERED 3 AND HIGHER ARE UNIQUE

Two different sections cannot be named 3A. But, there are TWO columns labelled 1 and TWO columns labelled 2. That is, there are tracks D1 and D2, and voices V1 and V2.

The computer internally knows the difference between drum and voice columns, and will NOT let you call a drum section in a voice column or vice versa. Quite literally drums 1A and music 1A are "different" names!

So, 1A is a drum section if the cursor is on track D1 or D2, and 1A is a music section if the cursor is on a column V1-V8 when you call section 1A.

THERE CAN BE SECTIONS OF SECTIONS:

A section can contain segments, and/or SECTIONS as well. You can create a section 8M that contains sections 6A, 4B, and 2C, for example. Section 6A could contain sections 3C and 7D. And Section 7D could contain other section(s), such as 6E, 1F, 2G, etc.

The limit of this "nesting" of segments and sections is: nesting may not exceed FOUR deep for any section. A section that contains its own name will NOT play infinitely due to the nesting rule.

//

ENTER SEGMENT (DRUM) ------------------ [1-9] then [--]

SCORE (5): After you create a DRUMS (1) segment, its name can be entered on the SCORE (5) so that segment can be played.

Move the cursor to EITHER Track D1 or D2 in SONGSTEPPER. In MIDI DRUM SONGSTEPPER use of track D1 or D2 can cause a different set of drum sounds to be played. (See AT DRUM TRACK? command [@], the ENTER DRUM NUMBER command [1-8], and MIDI DRUM ASSIGN command [M] for details).

Type a single number from [1] through [9], that dictates HOW MANY TIMES the SCORE (5) will PLAY the DRUMS (1) segment named on the SCORE (5).

Type the two-character name [--] of the DRUMS (1) segment. IF YOU TYPE THE NAME OF A NONEXISTENT DRUMS (1) SEGMENT, THE SYSTEM WILL REFUSE IT!

See also the associated ENTER SEGMENT (MUSIC) command below.

//

ENTER SEGMENT (MUSIC) ----------------- [1-9] then
[A-M] or [A-O]
then [--]

To enter segment "FB" on the SCORE (5) and play it transposed by a TRANSPOSE (2) segment named "M", 9 times:
[9] then [M]
[F] then [B]

This will appear on the screen in the following format:

9M*FB

SCORE (5): After you create an EDIT MUSIC (3) or RECORD MUSIC (4) segment, its name can be entered on the SCORE (5) and that segment can be played.

All EDIT MUSIC (3) and RECORD MUSIC (4) segments entered on the SCORE (5) must follow this format:

USE-TRANSPOSE NUMBER

Type the single digit from [1]-[9] that indicates the NUMBER of times you wish the associated TRANSPOSE (2) segment to to be USED. (More information below).

TRANSPOSE LETTER

You MUST enter a single letter [A]-[O] in SONGSTEPPER, or [A]-[M] in MIDI DRUM SONGSTEPPER next. Select the name of the TRANSPOSE (2) segment you wish to USE.

SEGMENT NAME

Then enter the two-character name of the EDIT MUSIC (3) or RECORD MUSIC (4) segment to be PLAYED and HEARD.

SEGMENT ENTRY: AN EXAMPLE

FOR EXAMPLE, if you type [3] for the USE-TRANSPOSE NUMBER, and you have programmed the TRANSPOSE (2) segment YOU select to have 12 notes, the EDIT MUSIC (3) or RECORD MUSIC (4) segment you type next will play 3 X 12, or 36 times!

If all 12 notes in the TRANSPOSE (2) segment are Middle C, pitch of the EDIT MUSIC (3) or RECORD MUSIC (4) segment will stay the same for all 36 playings. (Middle C produces NO transposition). This is ONE way to create EXTENDED repetitions of music segments with no transposition.

If the TRANSPOSE has 12 notes, all measures of the associated EDIT MUSIC (3) or RECORD MUSIC (4) segment will play ONE time at the transposition (pitch level) specified by the FIRST NOTE of the TRANSPOSE (2) segment.

Then all measures of the EDIT MUSIC (3) or RECORD MUSIC (4) segment will play ONE time at the transposition specified by the SECOND NOTE of the TRANSPOSE (2) segment.

And so forth, through the TWELVE notes of the TRANSPOSE (2) segment. ONE USE, or rotation through all notes in a TRANSPOSE (2) segment having 12 notes will cause TWELVE PLAYS of the associated EDIT MUSIC (3) or RECORD MUSIC (4) segment. The number of measures in the EDIT MUSIC (3) or RECORD MUSIC (4) segment has no bearing on the number of times the EDIT MUSIC (3) or RECORD MUSIC (4) segment PLAYS.

So, when the FINAL NOTE (twelfth in this example) of the TRANSPOSE (2) segment is USED, this constitutes ONE USE of the USE-TRANSPOSE NUMBER.

If the first number you enter, the USE-TRANSPOSE NUMBER, is greater than 1, THE ENTIRE STRUCTURE PLAYS AGAIN. THE ENTIRE STRUCTURE CAN BE PLAYED UP TO 9 TIMES.

THINK OF IT AS A BASS LINE FOR A 12-BAR BLUES, FOR EXAMPLE:

IF the bass line is an EDIT MUSIC (3) segment named "LL" that is one measure of music,

And, a TRANSPOSE (2) segment, named "B" has 12 notes, arranged in the familiar I, IV, V blues chord pattern,

Then, when you see:

9B*LL

on the SCORE (5) you can expect to hear a bass line go through the changes for 9 choruses of the blues.

ONLY THE EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT IS ACTUALLY HEARD.

THE TRANSPOSE (2) SEGMENT IS USED, NOT PLAYED. IT CAUSES AN EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT TO PLAY AT PITCH LEVEL(S) DETERMINED BY NOTE(S) WITHIN THE TRANSPOSE (2) SEGMENT.

//

ENTER TRANSPOSE NOTE (COMPUTER) ------- [*] then [3-6]
then [A-G] then

if necessary
[SHIFT][#]
or [SHIFT][%]

then [RETURN]

TRANSPOSE (2): TO PROGRAM A TRANSPOSE (2) SEGMENT YOU MUST FIRST SELECT (2) FROM THE SONGSTEPPER MENU TO GO TO THE TRANSPOSE (2) SEGMENT MODE:

SCREEN PROMPTS:	YOUR RESPONSE:
(MENU)	type [2] then [RETURN]
TRANSPOSE NAME?	type [A-M] or type [A-O] then [RETURN]

If the name (single letter) you enter has already been used, or previously programmed, the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
REDO SEGMENT?	type [Y] or [N] then [RETURN]

If you type [Y] for Yes, the TRANPOSE (2) segment named with the letter on the screen will be CLEARED and you can reprogram it.

If you type [N] for No, the system will simply display the TRANSPOSE (2) segment named on the screen. You can add notes to it, or remove the last note of the segment by typing the [INST DEL] key. You can choose to completely clear the segment by repeatedly typing the [INST DEL] key. Or make no change.

TO EXIT THE TRANSPOSE (2) MODE TYPE THE [f5] FUNCTION KEY. THIS RETURNS YOU TO THE MENU.

PURPOSE OF A TRANSPOSE (2) SEGMENT

A TRANSPOSE (2) segment acts like a capo on a guitar. It transposes--it doesn't play. You can't play a TRANSPOSE (2) segment on the SCORE (5)--you USE it to transpose EDIT MUSIC (3) and RECORD MUSIC (4) segments that are entered on the SCORE (5) and played.

You name each TRANSPOSE (2) segment with a single letter from A-O for SONGSTEPPER, or from A-M for MIDI DRUM SONGSTEPPER. This single-letter name is ALWAYS used in conjunction with an EDIT MUSIC (3) or RECORD MUSIC (4) segment name in the SCORE (5) to "transpose" or uniformly raise or lower the pitches of all notes of that EDIT MUSIC (3) or RECORD MUSIC (4) segment.

TRANSPOSE (2) SEGMENTS ARE NOT PLAYED AS SUCH. YOU DON'T HEAR A TRANSPOSE (2) SEGMENT--ONLY ITS EFFECT ON THE EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT IT TRANSPOSES.

ALLOWABLE NAMES FOR TRANSPOSE (2) SEGMENTS

In SONGSTEPPER the allowable range of NAMES for a TRANSPOSE (2) segment is from the letter [A] through the letter [O]. IN MIDI DRUM SONGSTEPPER the range is from [A] through [M]. As always, no two segments may share the same name. If you use the same name twice, the most recent programming comprises that TRANSPOSE (2) segment.

Any NOTE letter: C,D,E,F,G,A,B of the musical scale can be entered into a TRANSPOSE (2) segment using the protocol shown at the heading of this dictionary entry. The range of allowable NOTES is expressed alphabetically, [A-G].

A MAXIMUM OF 12 NOTES per TRANSPOSE (2) segment is allowed. (more on this later). Use the [INST DEL] key to delete the last note entered if you make an error. To enter a transpose note using ONLY the computer keyboard, first display a TRANSPOSE (2) segment on the screen (see above). Then:

PROCEDURE TO PROGRAM A TRANSPOSE (2) SEGMENT

First type [*].

Then enter [3-6], the desired note's octave number within the allowed range:

The number [3] represents the notes from C upwards to B in the octave below middle C; [4] represents the notes from middle C to the B above it; and [5] represents the notes from C to B starting one octave above middle C. [6] represents ONE NOTE ONLY, the C two octaves above middle C. THAT IS, "6C" IS THE HIGHEST NOTE THAT MAY BE ENTERED.

Then enter [A-G], the letter name of the musical note to be entered, such as C, G, F, etc. the range alphabetically for musical notes is from [A] through [G] as indicated.

All transpositions are figured RELATIVE to middle C. For example, enter [4] then [G] to create a TRANSPOSE (2) segment that can transpose an EDIT MUSIC (3) or RECORD MUSIC (4) segment you use it with UP A PERFECT FIFTH. (4G is a perfect fifth above middle C).

If the note is a black note on a musical keyboard, enter the accidental. Type [SHIFT][#] for sharp. Type [SHIFT][%] for flat.

Note that either command requires use of the [SHIFT] key. The TRANSPOSE (2) segment NEVER displays BOTH sharps and flats.

It displays the entire segment in whichever accidental you asked for LAST, by typing [SHIFT][%] or [SHIFT][#]. In addition, all EDIT MUSIC (3) segments as well as all TRANSPOSE (2) segments will display either sharps or flats determined by your LAST choice for display of accidentals in a TRANSPOSE (2) segment.

ANY CHANGE IN DISPLAY OF ACCIDENTALS--FLATS OR SHARPS--EFFECTED IN A TRANSPOSE (2) SEGMENT OR AN EDIT MUSIC (3) SEGMENT WILL CAUSE ALL TRANSPOSE (2) SEGMENTS AND ALL EDIT MUSIC (3) SEGMENTS IN THE SONG TO REFLECT THE CHANGE IN DISPLAY OF ACCIDENTALS.

To enter the note, type [RETURN].

If you make an error, type [INST DEL], which deletes the last note of a transpose segment.

NOTE: ALL NOTES IN A TRANSPOSE (2) SEGMENT APPEAR ON A TREBLE (G CLEF) MUSICAL STAFF. NOTES FOR THE OCTAVE BELOW MIDDLE C WILL APPEAR ON THE SCREEN ABOVE MIDDLE C ACCOMPANIED BY THE "DOWN CARET" SYMBOL. THIS SYMBOL MEANS THE NOTE DISPLAYED IS AN OCTAVE LOWER THAN ITS REPRESENTATION ON THE MUSICAL STAFF.

TO EXIT THE TRANSPOSITION (2) MODE, TYPE THE [f5] FUNCTION KEY TO RETURN TO THE MENU.

USES OF TRANSPOSE (2) SEGMENTS:

SIMPLE INTERVALLIC TRANSPOSITION

In the SCORE (5), EVERY RECORD MUSIC (4) and EDIT MUSIC (3) segment name entered MUST appear in conjunction with a TRANSPOSE (2) segment NAME. That is, the TRANSPOSE (2) segment single letter name ALWAYS accompanies EDIT MUSIC (3) and RECORD MUSIC (4) segment names in the SCORE (5). Each mode (3) and mode (4) segment must be transposed, even though this may not be apparent to the ear. (see below)

The most obvious use of transposition is the transposition of an EDIT MUSIC (3) or RECORD MUSIC (4) segment by single INTERVAL, such as OCTAVE transposition. This is useful, since entry of EDIT MUSIC (3) notes is restricted to a three octave range to accomodate sensible display requirements.

The system REQUIRES that you use a TRANSPOSE (2) segment name with each EDIT MUSIC (3) and RECORD MUSIC (4) segment name placed in the SCORE (5). If you provide a TRANSPOSE (2) segment name of a TRANSPOSE (2) segment that HAS NOT BEEN PROGRAMMED, results will be unpredictable or unwanted. So, when you first load SONGSTEPPER or MIDI DRUM SONGSTEPPER, the following TRANSPOSE (2) segments have already been programmed for your convenience:

PREPROGRAMMED INTERVALLIC TRANSPOSE (2) SEGMENTS

TRANSPOSE (2) NAME:	TRANSPOSE INTERVAL:
L	DOWN ONE OCTAVE
C	NO TRANSPOSITION
H	UP ONE OCTAVE

Think of L for Low; C for middle C, which causes no transposition; and H for High. If you use L as the TRANSPOSE (2) segment name with an EDIT MUSIC (3) or RECORD MUSIC (4) segment name in the score, the EDIT MUSIC (3) segment will sound one octave LOWER than its notation indicates, and the RECORD MUSIC (4) segment will sound one octave LOWER than originally performed.

If you use H, the EDIT MUSIC (3) or RECORD MUSIC (4) segment will sound one octave HIGHER.

Use of the letter C to "transpose" an EDIT MUSIC (3) or RECORD MUSIC (4) segment in the SCORE (5) causes NO TRANSPOSITION, since the TRANSPOSE (2) segment named C uses Middle C as the transpose note. Since all transpositions are intervals RELATIVE to Middle C, use of the TRANSPOSE (2) segment named C amounts to NOT transposing at all. Such a "no tranpose" letter still MUST be entered in conjunction with an EDIT MUSIC (3) or RECORD MUSIC (4) segment name on the SCORE (5) if you want no transposition. This makes score entry consistent and keeps both you and the computer from getting confused.

NOTICE: THE TRANSPOSE (2) SEGMENT TRANSPOSES AN ASSOCIATED EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT BY INTERVAL, REGARDLESS OF THE MUSICAL "KEY" OF THE ASSOCIATED EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT. So, an EDIT MUSIC (3) or RECORD MUSIC (4) segment can be in ANY key. This EDIT MUSIC (3) or RECORD MUSIC (4) segment is transposed by a TRANSPOSE (2) segment AND CAUSED TO PLAY ONE TIME, by each INTERVAL relative to Middle C of each note within the TRANSPOSE (2) segment.

Given the three octave span of allowable TRANSPOSE (2) notes, it is apparent that TWO OCTAVES UP and ONE OCTAVE DOWN are the largest intervals that a TRANSPOSE (2) segment can transpose an EDIT MUSIC (3) or RECORD MUSIC (4) segment.

Of course, this octave control is relative WITHIN SONG PRODUCER. This transposition factor does NOT alter the actual octave or footage setting on the synthesizer you are using. (So, further octave control is possible as part of the instruments' program settings as well!)

PLEASE NOTICE: CHOICE OF LETTERS TO NAME TRANSPOSE (2) SEGMENTS IS LEFT UP TO YOU. YOU MAY REPROGRAM L,C, AND H TO BE WHATEVER YOU WISH. TO DO THIS, GO TO THE MENU, TYPE [2] THEN RETURN. THEN:

SCREEN PROMPTS:	YOUR RESPONSE:
TRANSPOSE NAME?	type [L] or [C] or [H]
REDO SEGMENT?	type [Y] to redo then [RETURN] (and reprogram)

This discussion should lead you to an understanding of how very RELATIVE the tonality or "key" of each EDIT MUSIC (3), or RECORD MUSIC (4) segment is. EACH EDIT MUSIC (3) AND RECORD MUSIC (4) SEGMENT IS IN THE MUSICAL KEY THAT THE TRANSPOSE (2) SEGMENT ASSOCIATED WITH IT DICTATES.

Do you see that you COULD always program EDIT MUSIC (3) segments or play RECORD MUSIC (4) segments in an easy key, like C, and use TRANSPOSE (2) segments to make the music sound in ANY key? (This might use up more of the available TRANSPOSE (2) segments than programming/playing in the intended final key.)

NUMBER OF TRANSPOSE (2) SEGMENT NOTES AND EDIT MUSIC (3) OR RECORD MUSIC (4) REPETITION

A TRANSPOSE (2) segment is programmed somewhat like an EDIT MUSIC (3) segment. However, in the TRANSPOSE (2) segment, DURATION of transpose note(s) is not programmed by the user, but is fixed as a whole note.

Each whole note in a TRANSPOSE (2) segment causes ONE PLAY of the EDIT MUSIC (3) or RECORD MUSIC (4) segment it is associated with in the SCORE (5). The representation of notes within a TRANSPOSE (2) segment as WHOLE notes has NO BEARING on the INTERNAL timing or rhythmic structure of any EDIT MUSIC (3) or RECORD MUSIC (4) segment named in the SCORE (5).

EACH whole note in a TRANPOSE (2) segment is merely shorthand that says "play the associated EDIT MUSIC (3) or RECORD MUSIC (4) segment ONCE." If there are THREE notes in a TRANPOSE (2) segment, it will play the EDIT MUSIC (3) or RECORD MUSIC (4) segment you associate with it THREE times. THREE times, regardless of how many measures the EDIT MUSIC (3) or RECORD MUSIC (4) segment has; what the time signature (e.g. 4/4 or 5/16, etc.) is; or what the segment clock is.

In the preprogrammed TRANSPOSE (2) segments L,C, and H above, the TRANSPOSE (2) segment has only ONE note. Such a TRANSPOSE (2) segment causes ONE play, with a simple intervallic transposition of the notes in an associated EDIT MUSIC (3) or RECORD MUSIC (4) segment. The EDIT MUSIC (3) or RECORD MUSIC (4) segment plays ONCE, since the TRANSPOSE (2) segment has only ONE note.

IN THE CASE OF A TRANSPOSE (2) SEGMENT THAT HAS MORE THAN ONE NOTE, USE OF THIS TRANSPOSE (2) SEGMENT'S NAME TO TRANSPOSE AN EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT WILL CAUSE THAT (3) OR (4) SEGMENT TO PLAY MORE THAN ONCE. The EDIT MUSIC (3) or RECORD MUSIC (4) segment will play as many times as there are notes in the particular TRANSPOSE (2) segment you associate with it.

Since there can be as many as 12 notes in a TRANSPOSE (2) segment, it is possible to make an EDIT MUSIC (3) or RECORD MUSIC (4) segment named in the SCORE (5) play 12 times, using only the appropriate TRANSPOSE (2) segment name. Obviously if you program the TRANSPOSE (2) segment to represent the interval changes of a 12-bar blues, the segment in the SCORE (5) will play its notes and transpose appropriately to play a 12-bar blues pattern! See the ENTER SEGMENT (MUSIC) command.

The rule is simple. EACH whole note (only kind possible!) in a TRANSPOSE (2) segment can cause ONE "play" of an EDIT MUSIC (3) or RECORD MUSIC (4) segment in the SCORE (5). The interval of transposition FOR EACH PLAY is determined by YOU, by programming the various TRANSPOSE (2) notes RELATIVE TO MIDDLE C. Middle C causes no transpostion. Other Transpose notes will transpose EDIT MUSIC (3) or RECORD MUSIC (4) segments named in the SCORE (5) by the interval of the TRANSPOSE (2) note relative to Middle C.

THE ALLOWABLE SPAN OF TRANSPOSE NOTES IS FROM ONE OCTAVE BELOW MIDDLE C TO TWO OCTAVES ABOVE MIDDLE C. THIS IS A THREE OCTAVE SPAN FROM C THROUGH C. THIS IS ALSO MIDI NOTES 48 THROUGH 84.

Since Tranpose letters can account for score entry repetitions, you must constantly be aware of HOW MANY NOTES the TRANSPOSE (2) segments you use have.

TRANSPOSE (2) information can be unique for each song you do, and is stored with the song, just like other segment data.

A MAXIMUM OF 12 TRANSPOSE NOTES MAY BE ENTERED FOR A TRANSPOSE (2) SEGMENT.

See also the ENTER TRANSPOSE NOTE (MIDI) command below.

//

ENTER TRANSPOSE NOTE (MIDI) ----------- play keyboard
then [RETURN]

TRANSPOSE (2) segment: The discussion in the dictionary entry that immediately precedes gives an explanation of some uses of the TRANSPOSE (2) segment. Please read it thoroughly.

The MIDI option for programming a TRANSPOSE (2) segment simplifies its programming.

To program a TRANSPOSE (2) segment connect the MIDI OUT of your musical keyboard to the MIDI IN of the SONG PRODUCER.

Touch and release the key on the MIDI keyboard of the note you wish to appear on the screen. THE ALLOWABLE SPAN OF NOTES IS FROM MIDI NOTE 48 TO MIDI NOTE 84. THIS IS A THREE OCTAVE RANGE FROM C BELOW MIDDLE C TO C TWO OCTAVES ABOVE MIDDLE C. If you try to enter a note OUTSIDE these limits the system will refuse to enter it properly. Instead, it will enter a low C.

Type [RETURN] to enter that note. If you make an error, use the [INST DEL] key to delete the last note entered. (Use the [INST DEL] key as many times as necessary to completely clear a TRANSPOSE (2) segment).

NOTE: ALL NOTES WILL APPEAR ON THE TREBLE MUSICAL STAFF. NOTES BELOW MIDDLE C WILL BE DISPLAYED ABOVE MIDDLE C ACCOMPANIED WITH THE "DOWN CARET" SYMBOL. THIS SYMBOL INDICATES THAT THE NOTE IS ONE OCTAVE LOWER THAN DISPLAYED.

A MAXIMUM OF 12 TRANSPOSE NOTES MAY BE ENTERED IN A TRANSPOSE (2) SEGMENT.

See also ENTER TRANSPOSE NOTE (COMPUTER) command, immediately above.

//

FIRST LINE ON VIDEO? ------------------ [F]

SCREEN PROMPTS:	YOUR RESPONSE:
FIRST LINE?	type [1-101] then [RETURN]

SCORE (5): The FIRST LINE command [F] lets you determine which "chunk" of the 120 line SCORE (5) you wish to display on the screen. To give this command:

Type [F] when the SCORE (5) is displayed.

Type the number of the score line from 1 to 101 you wish to appear at the FIRST LINE on the screen. (Actually the system will also accept numbers 102-120 here, but the SCORE (5) will necessarily start at 101 for these responses, since the SCORE (5) has only 120 lines. The last score line cannot be the first at the top of the screen!

CORRECT A NUMERICAL ENTRY ERROR USING THE [INST DEL] KEY.

Then type [RETURN].

Your response to the prompt after you type [F] will dictate which score line will be the first score line number at the top of the screen. For instance if you type

[F] and enter [3] then [5] then [RETURN], the SCORE (5) display will start on line 35 and go through line 54.

This will be the case until you give another [F] command, and change the first line, OR return to the SCORE (5) via the MENU by selecting mode 5 (type [5] then [RETURN]). Type [f5] to go to the MENU. WHEN THE MENU IS ON THE SCREEN, type [5] then [RETURN] to return to the SCORE (5) and score line number "1" will once again be the first line on the screen.

Use of the [f7] function key, a GO TO command, to return to the SCORE (5) DOES NOT cause a change of first line on return to the SCORE (5).

This FIRST LINE ON VIDEO command [F] is particularly useful when NAMING sections on the SCORE (5) as opposed to actually CALLING sections to be played. As you will discover, section NAMES or HEADINGS appear on solid bars that cause the SCORE (5) to STOP PLAYING in any and all columns in which they appear.

So it is necessary to put sections--with their names on solid bars--on an area of the SCORE (5) that doesn't interfere with the actual PLAYING of the song--the part that calls and plays these sections.

One possible scheme is placing section HEADINGS on higher score line numbers, say lines 70 and greater. In this case, the actual "playing" SCORE (5) might start on score line 1.

How to get back and forth between the two sets of information? That's why we have the FIRST LINE ON VIDEO command [F].

See also GO TO SCORE/SEGMENT command [f7].

///

GO TO DRUM PAGE ---------------------- [D]

DRUMS (1) MIDI DRUM SONGSTEPPER ONLY: This command is the same as the DRUM PAGE RETURN command [D].

For a complete description, see that entry elsewhere in this dictionary. This entry in the dictionary is for convenience, to place this variant of the [D] command in context with other GO TO commands that cause a change of video page.

This command can be used ONLY following the MIDI DRUM ASSIGN command [M]. That is, MIDI drum assignment is the ONLY context for this GO TO DRUM PAGE command [D]. Also, this command appears ONLY in MIDI DRUM SONGSTEPPER.

This special use of the [D] key should NOT be confused with the more-common DELETE commands [D].

See also, for comparison, DELETE DRUM NUMBER command [D];

DELETE SCORE ENTRY (CLOSE UP) command [D]; and DELETE NOTE/REST command [D].

//

GO TO NEXT DRUM PAGE ------------------ [.] or [SHIFT][.]

DRUMS (1): When viewing a DRUMS (1) segment that comprises several video pages, type [.] or [SHIFT][.] to go to the NEXT HIGHER NUMBERED video page. Note that either shifted or unshifted use of the period key causes this result. The shifted version is equivalent to > "greater than." The > greater than sign is a visual cue for page movement.

NOTE: This command cannot be used when programming to go to the "next" page unless the page on display is completely FILLED. You can NOT go to the "next" page until the DRUMS (1) page currently on screen is programmed completely with numbers OR BLANKS. This means the cursor must have been moved to the LAST column of a DRUMS (1) grid during your programming on the drum grid before the video page on display is considered completely programmed!

See also GO TO PRECEDING DRUM PAGE command [,] below.

//

GO TO NEXT MUSIC PAGE ----------------- [.] ONLY

EDIT MUSIC (3): When viewing an EDIT MUSIC (3) segment that comprises several video pages, type the UNSHIFTED PERIOD KEY [.] to go to the NEXT HIGHER NUMBERED video page of that segment. Note that ONLY THE UNSHIFTED version of the period key gives this command.

NOTE: This command can NOT be used during programming to go to a video page that does not exist. When programming, you can go to the "next" page only after completing the page on display with notes and rests.

See also CURSOR ALIGN PAGE command [SHIFT][.] or [>] for an explanation of the use of the shifted period key.

//

GO TO PRECEDING DRUM PAGE ------------- [,] or [SHIFT][,]

DRUMS (1): When viewing a DRUMS (1) segment that comprises several video pages, type [,] or [SHIFT][,] to go to the NEXT LOWER NUMBERED video page. THE LOWEST PAGE NUMBER FOR ANY SEGMENT IS 1.

Note that either shifted or unshifted use of the comma key causes this result. The < less than sign is a visual cue to page movement.

See also GO TO NEXT DRUM PAGE command [.] or [SHIFT][.] above.

//

GO TO PRECEDING MUSIC PAGE ------------ [,] ONLY

EDIT MUSIC (3): When viewing an EDIT MUSIC (3) segment that comprises several video pages, type the UNSHIFTED COMMA KEY [,] to go to the NEXT LOWER NUMBERED video page of that segment. THE LOWEST PAGE NUMBER OF ANY SEGMENT IS 1.

Note that ONLY THE UNSHIFTED version of the comma key gives this command.

//

GO TO MENU ---------------------------- [f5]

ALL MODES: DRUMS (1), TRANSPOSE (2), EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type the [f5] function key to return to the MENU, which provides choice of the nine modes.

This command will return you to the MENU from any video page, but sometimes you must be at a "return" point on that page before this command will work. For instance, when assigning MIDI drum numbers using the [M] command, you must give the DRUM PAGE RETURN command [D] to first return to the DRUMS (1) mode, with a DRUMS (1) segment on display. From that point [f5] will return you to the MENU.

Similarly, the [f5] command will not necessarily let you avoid answering questions such as "SEGMENT NAME?" In general, the system is set up to require completion of the prompts that are followed by a question mark. Complete the prompts and THEN use the [f5] function key to return to the MENU.

See also both NEW SEGMENT commands [N] and [SHIFT][N] for shortcuts that allow changes of mode that bypass the MENU.

//

GO TO SCORE/SEGMENT ------------------- [f7]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type the [f7] function key to ALTERNATELY GO BETWEEN the SCORE (5) and a particular segment in another mode, such as DRUMS (1), EDIT MUSIC (3), or RECORD MUSIC (4).

The PARTICULAR segment the SCORE (5) alternates with is determined by the NAME of the segment on display when you first type the [f7] function key.

For example, if you are viewing a DRUMS (1) segment named "DA" and you type the [f7] function key, you will go immediately to the SCORE (5). When you type [f7] again, you will return to the SAME SEGMENT "DA" from which you originally departed using the [f7] command.

Each time you type [f7] subsequently, it will cause alternation between display of the SCORE (5) and THAT PARTICULAR SEGMENT. This provides a handy way to edit a segment, then hear that edit in the SCORE (5).

NOTE: YOU MUST SAVE AN EDITED SEGMENT (IN MEMORY) BEFORE YOUR EDITS WILL BE RECOGNIZED AND HEARD IN THE SCORE (5). USE OF [F7] DOES THIS STORE FOR YOU AUTOMATICALLY. OR YOU MAY WISH TO CONTINUE LOOKING AT THE SEGMENT WHILE HEARING THE SCORE (5). IF YOU EDIT THE SEGMENT, TYPE [N] THEN [RETURN] FOR A SO-CALLED "DUMMY" STORE. THEN TYPE THE [F1] FUNCTION KEY TO PLAY THE SCORE (5) WHILE VIEWING THE SEGMENT.

CHANGING THE SEGMENT MODE ALTERNATED TO

Go to the MENU by typing the [f5] function key and select another mode to change the [f7] alternation pattern. When on the new segment, for instance EDIT MUSIC (3) segment "MD", type [f7] repeatedly to alternate between the SCORE (5) and that EDIT MUSIC (3) segment named MD.

See also the NEW SEGMENT commands [N] and [SHIFT][N] for ways to get to a different segment in order to change the segment that alternates with the SCORE (5) when the [f7] function key is typed.

///

HEADINGS (DISPLAY) ------------------- [H]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): The HEADINGS, DISPLAY command [H] is used to display the headings of all DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4) segments, and autocorrected RECORD MUSIC (4) segments ON THE SCREEN.

Display a DRUMS (1), EDIT MUSIC (3), or RECORD MUSIC (4) segment.

Then type [H]. The screen will display HEADINGS in this order:

> First, ALL the DRUMS (1) segment headings, then ALL the EDIT MUSIC (3) segment headings, then ALL the RECORD MUSIC (4) segment headings, and finally all of the (unedited) autocorrected RECORD MUSIC segment headings. For each category, segments of that mode are displayed by name IN THE ORDER you created them for this song.

The heading for each segment gives valuable information regarding timing, notation, number of measures, etc.

DRUMS (1): A typical example for a DRUMS (1) segment heading is:

NAME	COMMENT	SEGMENT CLOCK #	NOTES #	BEATS #	MEASURES #
DA	INTRO	1: 2	8	4	4 M'S

The NAME DA is the two-character alphanumeric name of a segment, e.g. "DA."

The COMMENT field is an eight-character field that follows a space after the two-character NAME. You may type a COMMENT in this field when you answer a "SEGMENT NAME?" prompt. When answering this prompt, always type the two-character [--] segment NAME first; then enter a SPACE by typing the [SPACE BAR]; then type your COMMENT, using numbers and letters.

The SEGMENT CLOCK NUMBER 1: 2 expresses the relative ratios among playback speed for the various segments in the song. Segment clock 1:1 is the fastest segment clock; 1:2 is TWICE as slow; 1:4 is four times slower than 1:1; 1:2 is TWICE as FAST as 1:4, and so forth.

The NUMBER OF NOTES/BEAT 8 is the number of columns on the drum grid that comprise a BEAT. Since there are 8 notes per beat, each column would represent a 32nd note within the segment. NOTE: A CHANGE IN THIS NUMBER DOES NOT CHANGE PLAYBACK SPEED. IT MERELY ASSISTS YOU IN ORGANIZING A DRUMS (1) SEGMENT BY PROVIDING A CHANGE IN THE SPACING OF BEAT NUMBERS/LETTERS AT THE TOP OF A DRUMS (1) SEGMENT. A COLUMN ON THE DRUMS (1) GRID ALWAYS OCCUPIES THE SAME DURATION/TIME GIVEN NO CHANGE OF SEGMENT CLOCK.

The NUMBER OF BEATS/MEASURE 4 is the number of quarter notes, or BEATS per measure as displayed on the screen. This segment is in 4/4 time.

The NUMBER OF MEASURES tells how many COMPLETE measures this segment has. An incomplete measure at the end of the segment will not be reflected when the HEADINGS (DISPLAY) command [H] is given.

EDIT MUSIC (3), a typical example:

NAME	COMMENT	SEGMENT CLOCK #	BEATS #	MEASURES #	MODE
EM	OBOE	1: 4	4	2 M'S	EDIT

The NAME EM is the two-field name for this segment.

The COMMENT OBOE is a reminder that you put in the COMMENT field that helps to identify this segment's function, etc. See explanation of COMMENT field above.

The SEGMENT CLOCK NUMBER 1: 4 indicates the local clock playback speed for this segment in relationship to other segments. See above.

The BEATS (PER MEASURE) 4 tells you there are four quarter notes per measure.

The NUMBER OF MEASURES tells how many complete measures there are in this segment. Incomplete final measures are ignored in this count.

The MODE indicated by the word "EDIT" for this example indicates that this is an EDIT MUSIC (3) segment.

RECORD MUSIC (4), a typical example:

NAME	COMMENT	SEGMENT CLOCK #	BEATS #	MEASURES #	MODE
MD	RIFF1	1: 1	4	16 M'S	RECORD

The NAME MD identifies the segment.

THE COMMENT RIFF1 further identifies the function of this segment. See explanation of COMMENT field above.

The SEGMENT CLOCK # of ALL RECORD MUSIC (4) segments is 1: 1. They are recorded live at the equivalent of the fastest segment clock.

The BEATS number 4 is your choice of how many quarters there are in a measure.

The MODE indicates, using the word "RECORD" that this is a RECORD MUSIC (4) segment.

IF A RECORD MUSIC (4) SEGMENT IS AUTOCORRECTED, IT WILL BE DISPLAYED IN A FINAL CATEGORY AS ABOVE WITH THE EXCEPTION THAT "A-C" WILL INDICATE ITS MODE (AUTOCORRECTED).

WHEN YOU FIRST TYPE [H], THE SCREEN BEGINS TO DISPLAY SEGMENTS BY MODE, IN THE ORDER YOU CREATED THEM WITHIN THAT MODE, FOR THIS SONG. If there are enough segment headings to cause the screen to overflow, it will "scroll" the first segment heading off the screen at the top while it provides data on another segment heading at the bottom.

TO STOP SCROLLING, TYPE AND HOLD THE [SPACE BAR] OR ANY OTHER KEY. RELEASE THIS KEY TO CONTINUE DISPLAY OF HEADINGS.

TO EXIT THIS DISPLAY OF HEADINGS BEFORE IT FINISHES, TYPE THE [f5] FUNCTION TO RETURN TO THE MENU.

See also the HEADINGS (PRINT) command [SHIFT][H] below.

//

HEADINGS (PRINT) ---------------------- [SHIFT][H]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): The HEADINGS (PRINT) command [SHIFT][H] causes a PRINTOUT on paper of the same segment headings displayed by the HEADINGS (DISPLAY) command [H] discussed above.

CURRENTLY, THE COMMODORE MODELS 1525 AND 801 PRINTERS EXECUTE THIS COMMAND. POSSIBLY OTHER PRINTERS WILL WORK. TRY BEFORE YOU BUY.

With a DRUMS (1), EDIT MUSIC (2) or RECORD MUSIC (4) segment on display, type [SHIFT][H].

THE RULES TO TEMPORARILY HALT OR STOP PRINTING ARE:

Type and hold the [SPACE BAR] OR ANY OTHER KEY TO INTERRUPT TEMPORARILY.

Type the [f5] function key to exit printing routine and return to MENU.

See description of HEADINGS (DISPLAY) command [H] above.

///

INSERT NOTE/REST (COMPUTER) ----------- [I] then [*]
then [3-6]
then [A-G] then

if necessary
type [SHIFT][#]
or [SHIFT][%]

then [1-9-0]
then [RETURN]
or [S] or [R]

EDIT MUSIC (3): The INSERT NOTE/REST (COMPUTER) command [I] offers another way to enter a note or rest into an EDIT MUSIC (3) segment.

THIS COMMAND ALLOWS INSERTION, OR ADDING OF A NOTE, RATHER THAT "OVERWRITING," OR REPLACEMENT OF A NOTE.

When completed, this command causes a note or rest to be inserted at the POSITION where the CURSOR is when the command is INITIATED by typing [I].

The command is COMPLETED by typing either the [RETURN], [R], or [S] key. When this final keystroke is made, all notes and rests ABOVE AND TO THE RIGHT OF the cursor move to the RIGHT to provide space for the note or rest that is INSERTED.

The cursor also moves to the RIGHT following completion of the command.

MOVE the cursor to the position where you would like to INSERT a note or rest.

Type [I] for Insert.

Then type [*] for computer keyboard entry.

Then enter [3-6], a single digit that represents the octave of the note to be inserted.

The digit [3] represents notes from C up through B starting on the C one octave below middle C. [4] represents the notes from middle C up through the B above. [5] represents the notes C through B starting with the C one octave above middle C. And [6] represents ONE NOTE ONLY, the C two octaves above middle C. THAT IS, "6C" IS THE HIGHEST NOTE THAT MAY BE INSERTED. This pitch span is the same as MIDI notes 48-84.

Then type [A-G], the single letter name of the note. This is the same as the notes of the musical scale: C, D, E, F, G, A, and B.

If the note is a black note type [SHIFT][#] for a sharp. Type [SHIFT][%] for a flat. A sharp is the note immediately ABOVE a white note. A flat is a note immediately BELOW a white note.

Next enter the duration as usual using numbered keys [1] through [0]. See the ENTER NOTE/REST (COMPUTER) command for a review if necessary.

Type [RETURN] to insert the note.

Type [S] to insert the note with a slur/tie mark. See also the SLUR/TIE command [S].

Type [R] to insert a rest that has the DURATION you entered. To insert a rest you do NOT have to type the octave/note flat/sharp information:

TO INSERT A REST

Type [I]
Type [1-9-0]
Type [R]

The note/rest at the cursor and everything to its right will move TO THE RIGHT to admit the inserted note/rest. The segment will be automatically rebarred to reflect the duration of the inserted note or rest.

After this command is executed, the cursor MOVES TO THE RIGHT so it remains under the SAME note/rest where you placed it in order to give the INSERT A NOTE/REST command [I]. The cursor is positioned to allow immediate entry of the NEXT note you wish to INSERT.

IN SUMMARY, THE INSERT NOTE/REST COMMAND [I] CAUSES A NEW NOTE/REST TO BE INSERTED AT THE CURSOR WHEN THE COMMAND IS COMPLETED. NOTES ABOVE AND TO THE RIGHT OF THE CURSOR MOVE TO THE RIGHT ON COMPLETION OF THE COMMAND, TO ALLOW INSERTION OF THE NEW NOTE. THE CURSOR MOVES TO THE RIGHT ALSO FOLLOWING EXECUTION OF THE COMMAND.

See also the ENTER NOTE/REST (COMPUTER) command.

//

INSERT NOTE/REST (MIDI) --------------- [I] then
play keyboard
then [1-9-0]
then [RETURN]
or [S] or [R]

EDIT MUSIC (3): The INSERT NOTE/REST (MIDI) command [I] offers another way to enter a note or rest into an EDIT MUSIC (3) segment.

On completion, this command causes a note or rest to be inserted at the POSITION where the cursor is when the command is INITIATED by typing [I].

This command is completed by typing either the [RETURN], [R], or [S] key. When this final keystroke is made, all notes and rests ABOVE AND TO THE RIGHT of the cursor move TO THE RIGHT to provide space for the note or rest that is INSERTED.

The cursor also moves to the right on completion of the command to allow easy entry of the NEXT note you wish to insert.

Using a MIDI keyboard simplifies giving the [I] command. Connect the MIDI OUT of the keyboard to the MIDI IN on the SONG PRODUCER.

Move the cursor to the position where you would like to INSERT a note or rest.

Type [I] for Insert.

Then play the note to be inserted on the MIDI keyboard within the allowable three octave range (C below Middle C through and including C two octaves above Middle C, same as MIDI notes 48-84). BE SURE THAT THE MIDI OUTPUT OF YOUR KEYBOARD IS CONNECTED TO THE MIDI IN OF THE SONG PRODUCER.

Next enter the rhythm as usual using numbered keys [1] through [0] on the computer keyboard. See ENTER NOTE/REST (COMPUTER) command for a review.

Type [RETURN] to insert the note.

Type [S] to insert the note with a slur (or tie) mark. See SLUR/TIE command [S].

Type [R] to insert a rest that has the DURATION entered using the computer keyboard.

To insert a rest, you do not have to play a note on the MIDI keyboard:

TO INSERT A REST

Type [I]
Type [1-9-0]
Type [R]

The note or rest originally at the cursor and everything to its right will move TO THE RIGHT to admit the inserted note or rest. The segment will be automatically rebarred to reflect the duration of the inserted note or rest.

After the command is executed, the cursor will MOVE RIGHT so it remains under the note/rest where you placed it to give the command. The cursor is positioned to allow easy entry of the NEXT note you wish to INSERT.

IN SUMMARY, THE INSERT [I] COMMAND CAUSES A NEW NOTE/REST TO BE INSERTED AT THE CURSOR WHEN THE COMMAND IS COMPLETED. THE NOTES AND RESTS ABOVE AND TO THE RIGHT OF THE CURSOR MOVE TO THE RIGHT TO PROVIDE SPACE FOR THE INSERTED NOTE OR REST. THE CURSOR ALSO MOVES TO THE RIGHT AFTER THE COMMAND IS EXECUTED.

//

INSERT SPACE AT CURSOR ---------------- [I]

SCORE (5): The INSERT SPACE AT CURSOR command [I] is used to insert a "blank" or space in a SINGLE COLUMN on the SCORE (5).

Move the cursor to the COLUMN DESIRED, and to the score line where you wish to insert a blank (space).

Type [I].

A space will appear in the column on the line to the immediate RIGHT of the cursor.

The entry that used to occupy that score line will move DOWN the screen to the score line one number GREATER. If fact, any GROUP of entries BELOW the inserted blank will be pushed down the screen to accomodate the new blank. All (nonblank) entries on successive score lines will be pushed DOWN one line until these entries encounter a blank LOWER on the screen in that column.

The cursor will also move down the screen to the line number ONE GREATER on completion of this command. Successive use of I on the score will move contiguous (touching each other; successive) nonblank entries DOWN the page (to higher score line numbers).

This command is typically used for SCORE (5) entry management, getting entries on the lines where you want them, and spaces where you want them.

See also command INSERT SPACES ACROSS SCORE command [SHIFT][I] below.

//

INSERT SPACES ACROSS SCORE ------------ [SHIFT][I]

SCORE (5): The INSERT SPACES ACROSS SCORE command [SHIFT][I] is used to insert blank spaces on ONE score line across ALL columns in the SCORE (5).

Move the cursor to the SCORE LINE where you want to insert spaces (ANY COLUMN).

Type [SHIFT][I]. Spaces will appear at EVERY column on the score line the cursor occupied at the time of the command. Other (nonblank) entries will move down the screen to higher score line numbers, until a blank is encountered, like the [I] command above.

THE CURSOR MOVES DOWN THE SCREEN TO THE SCORE LINE ONE NUMBER GREATER FOLLOWING THE COMMAND.

See also INSERT SPACE AT CURSOR command [I] above.

//

LOOP TO BEGINNING -------------------- [L]

SCORE (5): The LOOP TO BEGINNING command [L] places the word "LOOP" in the column and score line where the cursor is at the time of the command.

When the score reader encounters the word LOOP in ANY column it immediately returns to the beginning score line for the song, where the >>>>>> symbols are, and plays down from that point. NOTE: THIS COMMAND LOOPS TO THE SCORE LINE THAT HAS THE >>>>>> SYMBOLS, NOT NECESSARILY SCORE LINE 1. To learn how to make the >>>>>> symbols appear at the score line of you choice, see the BEGIN PLAY AT CURSOR (ALL) command [SHIFT][B].

Move the cursor to the column and score line from which you would like to loop. This is typically the LAST score line of a song.

Type [L]. The effect of this command is evident only upon playing the SCORE (5).

The LOOP TO BEGINNING command [L] will cause an infinite loop that plays forever. It is very useful for sound checks; for instance, in playing sections or segments repeatedly while balance or EQ is adjusted.

It is important to realize, that just as with the ALIGN SCORE command [SHIFT][L], the column in which LOOP appears may be important from a standpoint of score synchrony and definition of the loop point. Remember that each column in the SCORE (5) "reads" its entries as it encounters them, from low to high score lines, disregarding blanks. It is possible to place LOOP in a column such that the loop back to the beginning >>>>>> occurs BEFORE other columns are finished playing, for instance.

NOTE: NEVER PLACE A LOOP IN A COMPLETELY EMPTY COLUMN, OR PLAYBACK WILL LOCK UP IN AN INFINITE LOOP THAT IS SILENT.

To recover from this error, type the RESET command [RUN STOP][RESTORE]. Wait until the prompt appears on the screen. THEN TYPE [Y] THEN [RETURN] TO AVOID LOSING THE SONG YOU HAVE IN MEMORY.

See also the ALIGN SCORE command [SHIFT][L].

///

MENU MODES ----------------------------- [1-9] then [RETURN]

THE SONGSTEPPER OR MIDI DRUM SONGSTEPPER MENU MODES ARE THE NUMBERED MODES THAT APPEAR ON THE MENU SCREEN AFTER SONGSTEPPER OR MIDI DRUM SONGSTEPPER IS SELECTED FROM THE MASTER MENU AND LOADED INTO COMPUTER MEMORY.

THE "MENU MODES" ARE THE ALTERNATIVES LISTED ON THE MENU THAT APPEAR WHEN SONGSTEPPER OR MIDI DRUM SONGSTEPPER IS LOADED INTO MEMORY. THIS MENU ALLOWS YOU TO VISIT THE VARIOUS "MODES" OR FACILITIES THAT LET YOU MAKE MUSIC.

MODES [1-4] REPRESENT THE MODE, OR KIND OF SEGMENT YOU WISH TO USE TO PROGRAM PITCHED/NONPITCHED SOUNDS.

MODES [5-7] INVOLVE SCORE (5) OPERATIONS SUCH AS DISPLAYING, SAVING OR LOADING THE SCORE (5).

MODES [8-9] INVOLVE OTHER FUNCTIONS.

THE SONGSTEPPER SEGMENT MODES ARE:

(1) DRUMS

(2) TRANSPOSE

(3) EDIT MUSIC

(4) RECORD MUSIC

When the MENU is on the screen, select a number that represents the MODE desired.

DRUMS (1), EDIT MUSIC (3), OR RECORD MUSIC (4) SEGMENTS

After you select one of the segment modes among modes (1), (3), and (4), the screen will prompt you:

SCREEN PROMPTS:	YOUR RESPONSE:
	type [1] or [3]

	or [4] then [RETURN]
SEGMENT NAME?	type [--] then [RETURN] (type [f5] to go back to MENU after prompts are answered)

NAMING DRUMS (1), MUSIC (3) OR (4) SEGMENTS

Selection of a MENU alternative for a DRUMS (1), EDIT MUSIC (3) or RECORD MUSIC (4) segment requires you to enter a TWO-CHARACTER [--] segment name. Letters and numbers are allowed as parts of segment names. Any combination is allowed: "XA" and "AX" are DIFFERENT names.

We strongly advise against using numbers as part of segment names, since the SCORE (5) requires use of a number for a SECTION name. Use of letters only, e.g. DF, EF, GF, avoids confusion of segments with sections when reading the SCORE (5).

NEW/OLD SEGMENT NAMES

For DRUMS (1), EDIT MUSIC (3), and RECORD MUSIC (4) modes, if you enter a NEW name [--] that has NOT been used before, the system will immediately take you to a blank screen of the MODE requested by your choice of number on the MENU.

If, however, you enter the name [--] of an already EXISTING, or "OLD" segment, you will go to THAT segment, REGARDLESS OF WHICH MODE YOU SELECTED ON THE MENU. This is a handy way to jump from one segment mode to another.

MAXIMUM NUMBER OF SEGMENTS ALLOWED

THE MAXIMUM COMBINED NUMBER OF DRUMS (1), EDIT MUSIC (3), AND RECORD MUSIC (4) SEGMENTS ALLOWED IN A SONG IS 128.

MAXIMUM LENGTH OF DRUMS/MUSIC SEGMENTS

THE MAXIMUM LENGTH OF A DRUMS (1) SEGMENT IS 240 COLUMNS.

THE MAXIMUM LENGTH OF AN EDIT MUSIC (3) SEGMENT IS 120 "EVENTS."

> Any entry made using the [RETURN] key is worth TWO events. For example a note with no slur/tie mark.
>
> Any entry made using the [S] key is worth ONE event. For example a note with a slur/tie mark.

Any entry made using the [R] key is worth ONE event. For example any rest, including a compound rest made by striking several number keys to add up a duration.

THE MAXIMUM LENGTH OF A RECORD MUSIC (4) SEGMENT IS 120 "EVENTS."

An event here is a change of "trigger" (ON or OFF), OR a change of pitch.

Recording in the RECORD MUSIC (4) mode occurs as though the MIDI keyboard played were a monophonic keyboard with a LOW NOTE, SINGLE TRIGGER priority.

That is, if you slur notes together, only pitch changes occur, and fewer "events" will be generated than if you detach each note from its neighbors. In general, each slurred note costs ONE event; each detached note costs TWO events.

The actual number of NOTES you may record in a RECORD MUSIC (4) segment, then, falls between a MINIMUM of 60, if all notes are played detached from each other, and a MAXIMUM number slightly less than 120 if all notes are slurred. (The beginning of the first note of a group of slurred notes generates a trigger ON, an event. The end of the last note of a group of slurred notes generates a trigger OFF, another event.)

IF YOU EXCEED A DRUMS/TRANSPOSE/MUSIC SEGMENT LIMIT

If you exceed the limits of a DRUMS (1), TRANSPOSE (2), or EDIT MUSIC (3) segment, the cursor will refuse to move forward, or the segment will refuse to enter another note/rest, etc.

If you EXCEED the number of events allowed for a RECORD MUSIC (4) segment, a prompt will appear that tells you that you are "OUT OF MEMORY."

Rerecord in this case, and play fewer notes, slur more, or divide the passage played, and use TWO or more RECORD MUSIC (4) segments. This prompt does NOT mean you have exhausted ALL memory; just that portion allowed for THAT specific RECORD MUSIC (4) segment.

RECORD MUSIC (4) TIMING PROMPTS

Each time you select a SEGMENT mode from the MENU, you are "PROMPTED" by the screen to NAME that segment.

In addition to the prompt that asks for a name, the FIRST TIME you go to the RECORD MUSIC (4) mode, TIMING prompts will appear that must be answered. These TIMING prompts let you determine the TIMING and LENGTH of the RECORD MUSIC (4) segment you will record. These TIMING prompts for a RECORD MUSIC (4) segment is as follows:

SCREEN PROMPTS:	YOUR RESPONSE:
WHICH DRUM SEGMENT?	type [--] then [RETURN]
HOW MANY DRUM SEGMENTS LONG?	type [1-8] then [RETURN]
RELATIVE TO SEGMENT CLOCK 1:1 BEATS/MEASURE IS?	type [1-32] then [RETURN]

The first prompt asks for the NAME you wish to call THIS RECORD MUSIC (4) segment. Answer as described above.

DRUM SEGMENT AS METRONOME

The next prompt asks WHICH DRUM SEGMENT?

You MUST provide the name of an EXISTING DRUMS (1) segment. If there is NO DRUMS (1) segment currently in your song, you MUST RESET and provide one! To RESET:

TYPE [RUN STOP][RESTORE]

WAIT UNTIL "KEEP IN MEMORY?" PROMPT APPEARS

TYPE [Y], THEN [RETURN]

Type [1] then [RETURN] and name and program a DRUMS (1) segment!

RECORD MUSIC (4) SEGMENTS CANNOT BE RECORDED UNLESS AT LEAST ONE DRUMS (1) SEGMENT HAS BEEN PROGRAMMED. ALL RECORD MUSIC (4) SEGMENTS ARE "ACCOMPANIED" BY A DRUMS (1) SEGMENT AT THE TIME OF RECORDING.

The DRUMS (1) segment that you NAME in response to the FIRST TIMING PROMPT will ACCOMPANY you while you record a MONOPHONIC line of music on the MIDI keyboard. The DRUMS (1) segment acts like a metronome, or a drum accompaniment to time and guide your performance rhythmically.

TIMING OF THE RECORD MUSIC (4) SEGMENT

The TIMING of the DRUMS (1) segment selected determines the TIMING of the RECORD MUSIC (4) segment you record. That is, if the DRUMS (1) segment is in 4/4 time, the RECORD MUSIC (4) segment will be in 4/4 time; etc.

LENGTH OF RECORDING FOR RECORD MUSIC (4) SEGMENT

The next prompt asks HOW MANY DRUM SEGMENTS LONG?

The number you enter determines how many times the DRUMS (1) segment will play, and consequently HOW LONG the recording for the RECORD MUSIC (4) segment will last.

The DRUMS (1) segment will play ONE time MORE than the number you enter. This provides ONE SEGMENT worth of metronome or timing cues to prepare you to play. After this "one segment for nothing," recording starts whether you start playing or not. The system will record the MONOPHONIC musical line you play on the MIDI keyboard. The computer will automatically END recording when you told it to, depending on the TIMING of the DRUMS (1) segment and when the NUMBER OF DRUM SEGMENTS LONG number you entered has been completed.

IF YOU WANT TO RECORD 4 SEGMENTS WORTH, ENTER [4] FOR THIS PROMPT. THE SYSTEM WILL AUTOMATICALLY PROVIDE THE EXTRA "ONE FOR NOTHING" PLAY OF THE DRUMS (1) TO GET YOU STARTED. ALWAYS ENTER THE NUMBER YOU WANT FOR THE FINAL LENGTH OF THE RECORD MUSIC (4) SEGMENT.

BEATS/MEASURE NOTATION

The next prompt asks RELATIVE TO SEGMENT CLOCK 1:1 BEATS/MEASURE IS?

This involves how many quarter notes you wish to show to create a full measure. The number entered is "transparent" in sound; it only affects how things might LOOK on the screen if notation were displayed. See the TIMING A SEGMENT command [T] in this dictionary for more information.

NOTE: THESE TIMING PROMPTS WILL APPEAR AUTOMATICALLY THE FIRST TIME YOU TRY TO RECORD A RECORD MUSIC (4) SEGMENT. THE SYSTEM WILL ASSUME YOU WISH TO RECORD ALL SUBSEQUENT RECORD MUSIC (4) SEGMENTS THEREAFTER FOR THAT SONG USING THE SAME TIMING PROMPTS. SO, THE PROMP TS WILL NOT AUTOMATICALLY THEREAFTER.

To CHANGE THESE TIMING PROMPTS for any RECORD MUSIC (4) segment, including a new one that you are about to record, give the TIMING A SEGMENT command [T]. See also the TIMING A SEGMENT command [T].

The system always "defaults" to the entries you LAST made for these TIMING PROMPTS, until you once again give the TIMING A SEGMENT command [T].

THE TRANSPOSE (2) SEGMENT

When the MENU is on the screen, the TRANSPOSE (2) segment mode is alternative (2).

SCREEN PROMPTS:	YOUR RESPONSE:
	type [2] then [RETURN]
TRANSPOSE NAME?	type [-] then [RETURN]

NAMING TRANSPOSE (2) SEGMENTS

Selection of the MENU alternative (2) for a TRANSPOSE (2) segment prompts entry of a SINGLE LETTER [-] name.

The allowable range of letters for TRANSPOSE (2) segment names is [A-O] for SONGSTEPPER. For MIDI DRUM SONGSTEPPER, the allowable range of letters for a TRANSPOSE (2) segment is [A-M].

THE MAXIMUM NUMBER OF NOTES THAT MAY BE ENTERED IN A TRANSPOSE (2) SEGMENT IS 12.

To return to the MENU from ANY segment type the [f5] function key after answering any prompts that appear on the screen.

TO LEARN MORE ABOUT PROGRAMMING THE SEGMENT MODES, SEE ALSO THE FOLLOWING COMMANDS IN THIS DICTIONARY:

ENTER NOTE/REST command(s).

ENTER TRANSPOSE NOTE command.

DELETE NOTE/REST command(s).

ENTER DRUM NUMBER command.

DELETE DRUM NUMBER command.

RECORD MUSIC (START) command.

RECORD MUSIC (STOP & ERASE) command.

EDIT RECORD MUSIC command.

TIMING A SEGMENT command.

THE MENU MODES THAT RELATE TO THE SCORE (5) INCLUDE:

(5) SCORE

(6) LOAD

(7) SAVE

DISPLAY THE SCORE (5)

Type [5] then [RETURN] to display the SCORE (5). The display will start with score line 1 at the top of the screen. See the FIRST LINE ON VIDEO? command [F] for more information.

TYPE THE [F5] FUNCTION KEY TO GO FROM THE SCORE (5) TO THE MENU.

LOAD (6) A SONG FROM DISKETTE

Type [6] then [RETURN] to load a song from the DATA diskette in the disk drive into the computer memory where it can be edited and/or played.

Your songs should NEVER be stored on the MASTER PROGRAM diskette supplied with the SONG PRODUCER. Use a blank diskette that has been properly FORMATTED to create a DATA diskette. (For a review, see FORMATTING A DATA DISKETTE below).

THE LOAD (6) OPTION CAN ERASE EVERYTHING THAT IS CURRENTLY IN MEMORY. READ THIS SECTION CAREFULLY! After you type [6] then [RETURN], the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
DO YOU WANT TO KEEP ------------- IN MEMORY?	type [Y] or [N] then [RETURN]

The dashes ------------- in the prompt above represent the NAME of the song CURRENTLY in computer memory, the one whose name is displayed on the MENU. The dashes represent a alphanumeric name of up to 13 characters. (Song names can have up to 13 letters and numbers, but NO PUNCTUATION MARKS.)

WARNING! Type [N] FOR "NO" only if you wish to CLEAR memory, destroying the song that is currently in memory, the one you may have been working on! If you type [N], then [RETURN] at this point, this CLEARS computer memory and prepares the computer to load into memory a song that resides on the diskette (permanent storage).

Obviously, clearing MEMORY does NOT erase any song that resides on a diskette.

To SAVE a song to diskette, use the SAVE (7) mode. See below.

To be on the safe side, SAVE your song frequently after you make changes you wish to keep. Save it on more than one data diskette.

TYPE [Y] FOR "YES" if you want to keep the current song IN MEMORY and DEFEAT the load command.

TYPE [Y] IF YOU HAVE FORGOTTEN TO SAVE THE CURRENT SONG IN MEMORY TO DISKETTE AND WISH TO DO SO! This response is appropriate if you have failed to keep a permanent copy of the song on diskette and wish to, but haven't SAVED that song using the SAVE (7) mode yet.

Type [Y] if you accidentally asked for a LOAD and don't want one, or if a system problem has forced you to execute a RESET command [RUN STOP][RESTORE] to "reset" the computer (see the RESET command [RUN STOP][RESTORE]).

IT'S NOW OR NEVER, BABY, TYPE [Y] IF THERE IS ANY IMPORTANT INFORMATION IN MEMORY YOU WISH TO SAVE.

CLEARING MEMORY

If you type [N] for No, memory will be cleared, and the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
SONG TITLE?	type [-------------] then [RETURN]

The dashes in the prompt represent an alphanumeric song NAME of up to 13 characters. If you type in a song title, or name that is NOT on the diskette in the disk drive, or if the drive is not on, or if the diskette is improperly inserted, the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:
FILE NOT FOUND DISK ERROR!!!	
HIT ANY KEY	type any key

The screen returns to the MENU. Correct the error and try to load again: type [6], then [RETURN].

CLEARING MEMORY TO START OVER

To clear a song from memory that you don't want to keep, AND START PROGRAMMING AGAIN, simply RESET, by typing [RUN STOP][RESTORE]:

SCREEN PROMPTS:	YOUR RESPONSE:
DO YOU WANT TO KEEP ------------- IN MEMORY?	type [N] then [RETURN]
LOAD A SONG FROM DISK?	type [N] then [RETURN]
SONG TITLE?	type [-------------] then [RETURN]

You will return to the MENU ready to program a song with a TITLE you provided by answering the last prompt.

SAVE (7) A SONG ON DISKETTE

SCREEN PROMPTS:	YOUR RESPONSE:
(MENU DISPLAYED)	type [7] then [RETURN]

NEVER ATTEMPT TO SAVE A SONG ON THE MASTER DISKETTE SUPPLIED WITH THE SONG PRODUCER. ALWAYS USE ANOTHER "DATA" DISKETTE. THIS DATA DISKETTE MUST BE "FORMATTED," OR PREPARED TO ACCEPT STORAGE OF YOUR SONG(S) AS FOLLOWS:

FORMATTING A DATA DISKETTE

To format a data diskette so it can store your songs, do the following BEFORE YOU GET SOME NICE SONG PROGRAMMED:

With NO diskette in the disk drive, turn the POWER to the computer ON. You must start "cold," with the power first OFF, then turn it ON.

Put a new, "blank" diskette in the disk drive. Close and latch the drive door.

Type the following:

```
OPEN15,8,15,"N0:----------------,--"
```

You must enter EXACTLY what is shown above, or you will get a "SYNTAX ERROR." Use the [INST DEL] key to correct mistakes BEFORE typing [RETURN]. If you need to, remove the diskette, turn the computer OFF, and start over!

Notice that there are NO SPACES typed. OPEN uses the letter O; the character next to the N is a ZERO.

The first group of dashes ---------------- is a field for UP TO 16 alphanumeric characters for this diskette's NAME. Type 16 OR FEWER letters and numbers, but NO PUNCTUATION MARKS for this name.

Then type a comma as shown.

The last group of dashes -- is a two character ID name. Type letters, numbers or both, but NO PUNCTUATION marks. This last name SHOULD be unique for each diskette you use.

WRITE BOTH NAMES ON A STICKER AND STICK IT ON THE DISKETTE FOR IDENTIFICATION. DON'T PUT THE STICKER ON, AND THEN WRITE. YOU MAY DAMAGE THE DISKETTE.

MAKE SURE you have typed all characters above correctly. THERE SHOULD BE NO SPACES AND NO DASHES, JUST LETTERS, NUMBERS AND PUNCTUATION MARKS EXACTLY AS PRESCRIBED. Don't forget the comma between the diskette NAME and the two character ID. Correct using the [INST DEL] key.

Then, type [RETURN]

The computer will properly format the diskette. It takes about 90 seconds. Do not disturb until the disk drive light goes OFF!

0

TO VERIFY THAT FORMATTING TOOK PLACE:

Take the diskette out of the disk drive.

Turn the computer OFF, then ON.

Put the diskette back into the disk drive.

Type:

```
LOAD"$",8
```

Then type [RETURN]

Then type [L] then [I] then [S] then [T]

Then type [RETURN]

You should soon see a message and the name of your diskette. THIS VERIFIES THAT FORMATTING HAS BEEN DONE. THIS IS NOW A "DATA" DISKETTE CAPABLE OF STORING YOUR SONGS OR MIDI COMMAND PAGES. MAKE SEVERAL AND KEEP THEM AROUND!

SAVING KEEPS, BUT SAVING DESTROYS!

IT IS VERY IMPORTANT TO UNDERSTAND THAT A SAVE (7) OPERATION STORES DATA ON THE DISKETTE USING THE SONG NAME CURRENTLY DISPLAYED ON THE MENU. IT ALSO DESTROYS OLD DATA ON THE DISKETTE THAT HAS THE SAME NAME.

IF YOU ALREADY HAVE A SONG STORED ON DISKETTE USING THE NAME DISPLAYED ON THE MENU ON THE SCREEN, THE INFORMATION ON THE DISKETTE FOR THAT NAME WILL BE "OVERWRITTEN," OR REPLACED BY THE INFORMATION CURRENTLY IN COMPUTER MEMORY WHEN YOU EXECUTE A SAVE (7).

IF YOU WISH TO SAVE SEVERAL VARIATIONS OF A SONG, YOU MUST GIVE EACH A UNIQUE NAME. IN FACT, EVERYTHING SAVED ON A DISKETTE MUST HAVE A UNIQUE NAME. THAT IS, YOU CAN'T STORE BOTH A SET OF MIDI COMMAND PAGES AND A SONGSTEPPER SONG ON THE SAME DISKETTE USING THE SAME NAME WITHOUT DESTROYING ONE OR THE OTHER! BECAUSE OF THE DANGERS INVOLVED, IT IS RECOMMENDED THAT YOU INVENT UNIQUE NAMES FOR EVERYTHING SAVED, EVEN IF YOU USE DIFFERENT DISKETTES!

Execution of this SAVE (7) mode is IMMEDIATE. The computer will save the song currently in memory onto the diskette currently in the disk drive, using the name CURRENTLY displayed on the right side of the MENU. A SAVE (7) operation does NOT clear memory; the song is still there.

GIVE A SONG A NEW TITLE (8)

IF you wish to change the name of a song, do this BEFORE saving the song, using the NEW TITLE (8) option.

Each song takes up space on the diskette (holds approximately 12 pop tunes). Once a song is on disk, it is wasteful to reload it and THEN change its name and save it again. This will give you two copies of the same song with different titles on the same diskette.

RATHER, IT IS RECOMMENDED THAT YOU SAVE EACH SONG THAT YOU FIND VALUABLE ON MORE THAN ONE DATA DISKETTE. NEVER STORE

YOUR SONGS ON THE MASTER DISKETTE SUPPLIED WITH SONG PRODUCER. KEEP AN EXTRA COPY OF THIS MASTER AND COPIES OF YOUR SONGS! DISKETTES ARE NOT INDESTRUCTIBLE!

SCREEN PROMPTS:	YOUR RESPONSE:
(MENU DISPLAYED)	type [8] then [RETURN]
SONG TITLE?	type [-------------] then [RETURN]

This NEW TITLE (8) mode allows you to change the title, or name of your song.

The dashes [-------------] in the prompt represent the 13-field "new" name. Type 13 OR FEWER letters and numbers, but NO PUNCTUATION MARKS for a song name.

See also the SAVE (7) mode above.

DEFINE SYNC (9)

SCREEN PROMPTS:	YOUR RESPONSE:
(MENU DISPLAYED)	type [9] then [RETURN]
SYNC OUT H,M,L?	type [H] or [M] or [L] then [RETURN]

This option allows you to select among industry standards for sync clock speed at the CLOCK OUT 1/4" jack.

SELECT "H" for "High," or 96 pulses/quarter note.

SELECT "M" for "Medium," or 48 pulses/quarter note.

SELECT "L" for "Low," or 24 pulses/quarter note.

Default programming is H for 96 pulses per quarter and will remain that way unless you change it USING THIS COMMAND. CHECK YOUR DRUM MACHINE OR SEQUENCER TO SEE WHAT IT REQUIRES!

(Your selection of H, M, or L using this command does NOT affect the MIDI sync clock available through W-OUT for BOTH MIDI DRUM SONGSTEPPER and SONGSTEPPER programs. THE MIDI SYNC CLOCK IS AVAILABLE THROUGH W-OUT, REGARDLESS OF YOUR SELECTION USING THIS COMMAND. This MIDI sync clock is synchronized with segments in 4/4 time with segment clocks of 1: 3, or multiples of 3, e.g. 1: 6. Use the 1/4" CLOCK OUT jack where possible; it outputs an industry standard 96, 48, or 24 pulses per quarter clock).

Following entry of clock speed, the screen will prompt:

SCREEN PROMPTS:	YOUR RESPONSE:

12/8 TIME?	type [RETURN] or type [N] or [Y] then [RETURN]

If you simply type [RETURN], or if you type [N] then [RETURN], the SONG PRODUCER CLOCK OUT will provide a clock signal that would drive a drum machine in SIMPLE time, such as 4/4. In simple time the beat (quarter note, usually) is divided by two or four.

Only if you type [Y] then [RETURN] will the SONG PRODUCER CLOCK OUT provide a clock signal that would drive a drum machine in COMPOUND time, such as 12/8. Compound time has a triplet feeling; the beat is divided into three rather than two or four. Answer [Y] to change timing to PULSES PER DOTTED QUARTER NOTE rather than pulses per quarter note.

WHO SHALL BE MASTER?

SONG PRODUCER SHOULD BE USED AS THE MASTER CLOCK IN ANY SYNC ARRANGEMENT USING SONGSTEPPER OR MIDI DRUM SONGSTEPPER SINCE THIS SOFTWARE'S RESOLUTION IS BETTER THAN MANY DRUM DEVICES. IF YOU ATTEMPT TO "DRIVE" SONGSTEPPER OR MIDI DRUM SONGSTEPPER USING A LOW RESOLUTION DRUM MACHINE CONNECTED TO THE SONG PRODUCER CLOCK IN JACK, SONGSTEPPER OR MIDI DRUM SONGSTEPPER WILL PLAY YOUR SONG VERY SLOWLY.

///

MIDI BUS/VOICE OFF ------------------- [O] then [-]

SCORE (5): The MIDI BUS/VOICE OFF command [O] then [-] disconnects ONE voice from the specified MIDI bus or channel each time the command is given. This command affects ONLY the voice in the column of the SCORE (5) where the cursor is when the command is given. That is, only ONE voice V1-V8 at a time is affected by this command. The D1 and D2 drum tracks in the SCORE (5) will not accept this command.

Move the cursor to the column of the voice V1-V8 you wish to affect, say voice 4 (V4).

Type [O]. The column V4 displays, at the score line of the cursor, the word:

OFF

Now type [-], the single letter or number for the individual bus or channel from which you wish to disconect voice V4. The choice for buses is among the letters W,X,Y,Z and the choice for channels is among the numbers 2-9. That is, type a single allowable character of your choice.

For example, if you type [O] then [X], voice 4 will no longer play the instrument(s) connected to bus X via the

X-OUT MIDI output. If you type [O] then [7] when the cursor is on column V2, voice 2 will no longer play the instrument(s) connected to channel 7 via the Z-OUT MIDI output. Channels 2-9 exist only on the Z bus, the "channel assign" bus.

This command is a handy way to disconnect any ONE voice V1-V8 you previously assigned to a MIDI bus or channel. Any voice can be assigned to one or ALL buses and channels simultaneously, using many MIDI ON commands (see below). In practical terms, the voice might be "doubled" or "tripled" by assigning the voice to (only) two or three MIDI buses. One might then remove the "doubling" or "tripling" sound using the MIDI BUS/VOICE command [O] then [-] to turn off each of the buses/channels individually.

Of course ALL MIDI buses currently sounding a voice could be turned off by giving this MIDI BUS/VOICE OFF command [O] then [-] for each bus that is sounding the voice. However, a DIFFERENT command, The MIDI BUSES/VOICE OFF command [O] then [M] does this with a SINGLE command.

See also MIDI BUSES/VOICE OFF command [O] then [M] below.

///

MIDI BUSES/VOICE OFF------------------- [O] then [M]

SCORE (5): The MIDI BUSES/VOICE OFF command [O] then [M] disconnects ALL MIDI buses W, X, Y, and Z from ONE voice V1-V8 in the SCORE (5). This command does NOT affect the numbered CHANNELS 2-9 on bus Z that are available on the Z-OUT jack.

Even though you use this command to disconnect bus Z, channels 2-9 REMAIN active on the Z-OUT jack. Instruments connected to Z-OUT (daisy chained MIDI configuration) will still respond to commands given on the numbered channels 2-9.

THERE IS NO GLOBAL COMMAND THAT DISCONNECTS ALL NUMBERED CHANNELS FROM A VOICE. The MIDI BUS/VOICE OFF command [O] then [2-9] must be used repeatedly if necessary to individually disconnect numbered channels currently connected to a voice V1-V8 in the SCORE (5).

Move the cursor to the ONE voice V1-V8 column to be affected, at the score line you wish.

Type [O] then [M]. The column displays, at the score line of the cursor:

OFF M

The SCORE (5) voice that displays "OFF M" will not be heard on any MIDI instruments connected to MIDI buses on successive higher numbered score lines after "OFF M." The MIDI BUSES/VOICE OFF command [O] then [M] is used to "clear the decks," or disconnect a voice from ALL MIDI buses.

After disconnecting a voice from ALL MIDI buses, you may then choose to use the MIDI PROGRAM BUS/VOICE ON command [M] then [--] then [-] to assign the voice to ONE (or more) MIDI buses. If you do NOT assign a SCORE (5) voice to at least one MIDI bus or channel, that voice will not be heard!

//

MIDI PROGRAM BUS/VOICE ON ------------- [M] then [00-99] then [-]

SCORE (5): The MIDI PROGRAM BUS/VOICE ON command [M] then [00-99] then [-] is used to connect ONE voice V1-V8 on the SCORE (5) to a particular MIDI bus or channel. This command also causes the instrument so connected to play a specific two-digit MIDI PROGRAM (sound).

Move the cursor to the voice column V1-V8 of interest and the score line where you wish to make a program/bus/voice/ assignment.

Type [M] for MIDI.

Type [00-99], the two digit MIDI program number for the "preset," or number of the sound you want to hear.

USE TWO DIGITS; ENTER A LEADING ZERO FOR A SINGLE DIGIT PROGRAM NUMBER: for example program number seven would be [0] then [7]. The allowable range of program numbers is 00 through 99.

Type [-], the single character for the bus letter OR channel number YOU WISH THIS VOICE TO PLAY ON. The choices are : bus W, X, Y, Z; or M (for ALL buses); or channel 2, 3, 4, 5, 6, 7, 8, 9. If you wish to play a voice in the SCORE (5) on an instrument connected, for example, to the X-OUT jack, type [X] here.

IT IS POSSIBLE TO TYPE [M], MEANING ALL MIDI BUSES. Type [M] then [00-99] then [M] to connect a voice to ALL MIDI buses W, X, Y, and Z. This option does NOT connect that voice to all numbered channels. THIS VARIANT OF THE COMMAND ALSO NECESSARILY ASSIGNS THE SAME PROGRAM NUMBER "--" TO ALL BUSES!

ASSIGN A VOICE TO MORE THAN ONE BUS/CHANEL

This command may be used MORE THAN ONCE FOR EACH SCORE (5) VOICE, using several score lines, in order to make that voice play on more than one bus, or instrument. This is so-called "doubling" or "tripling," of the voice.

THAT IS, YOU CAN MAKE A SINGLE VOICE PLAY ON DIFFERENT INSTRUMENTS, EACH INSTRUMENT HAVING A DIFFERENT MIDI PROGRAM NUMBER.

NOTE, HOWEVER, THAT A SINGLE BUS CANNOT RESPOND TO

CONFLICTING MIDI PROGRAM NUMBER ENTRIES YOU MIGHT MAKE ON THE SCORE (5). THAT IS, A BUS OR CHANNEL CAN'T SEND TWO DIFFERENT MIDI PROGRAM NUMBERS SIMULTANEOUSLY TO ITS ASSOCIATED OUTPUT.

You should not tell a bus to play, say, PROGRAM 29 in one column on the SCORE (5) while telling that same bus to play PROGRAM 32 in another column at the same time! If you create a conflict like this, the system will resolve the conflict by accepting the MIDI PROGRAM BUS/VOICE ON entry, or PROGRAM number on the LOWEST numbered SCORE (5) voice V1-V8 among the conflicting entries.

WARNING! DUE TO A DISAGREEMENT CONCERNING THE MIDI STANDARD, SOME BRANDS OF SYNTHESIZERS WILL PLAY A PROGRAM NUMBER ONE HIGHER THAN THE MIDI PROGRAM NUMBER YOU ENTER ON THE SCORE (5)!! COMPARE THE PROGRAM NUMBER AS IT APPEARS ON THE SCORE (5) WITH THE DISPLAY OF YOUR INSTRUMENT. IF THERE IS A DIFFERENCE, YOU MUST ADJUST THE NUMBER YOU ENTER ON THE SCORE (5) ACCORDINGLY USING THIS COMMAND.

IN SUMMARY

The MIDI PROGRAM BUS/VOICES ON command [M] then [00-99] then [-] connects a voice V1-V8 on the SCORE (5) to a MIDI bus (or ALL MIDI buses) or a MIDI channel.

It also tells the instrument connected to that MIDI bus/channel, through its associated SONG PRODUCER MIDI output jack, which PROGRAM, or sound to play. The lettered buses W, X, Y, and Z are routed to the MIDI OUTPUTS W-OUT, X-OUT, Y-OUT, and Z-OUT. All the numbered channels 2-9 are routed to the Z-OUT.

Use the MIDI PROGRAM BUS/VOICE ON command [M] then [00-99] then [-] on several consecutive score lines within ONE column (V1-V8) to cause that voice to play on MORE THAN one bus or channel. This makes that voice PLAY on more than one instrument if instruments are connected to each of the MIDI buses specified.

To disconnect ONE of multiple bus/voice assignments, use the MIDI BUS/VOICE OFF command [O] then [-] command described in a dictionary entry above.

To disconnect ALL MIDI buses (but not channels) from a voice (which lets you "start over" with indiviual bus assignments) use the MIDI BUSES/VOICE OFF command [O] then [M] command (see above).

//

MIDI DRUM ASSIGN ---------------------- [M]

SCREEN PROMPTS:	YOUR RESPONSE:
DRUM 1 TRACK D1	[RETURN] to accept

or [ANY OTHER KEY]
to redefine DRUM 1

WHEN YOU TYPE ANY KEY EXCEPT [RETURN]:

SCREEN PROMPTS:	YOUR RESPONSE:
MIDI #= 46 NEW?	[RETURN] to accept 46 or type [--] then [RETURN]
VOLUME= 75 NEW?	[RETURN] to accept 75 or type [--] then [RETURN]
TRIGGER=0 NEW?	[RETURN] to accept 0 or type [1] then [RETURN]
DRUM 2 TRACK D 1	[RETURN] to accept or [ANY OTHER KEY] to redefine DRUM 2

AND ETC. THROUGH:

DRUM 8
TRACK D 2

TO EXIT, TYPE [D] TO RETURN TO THE DRUMS (1) SEGMENT. [D] WILL WORK ONLY WHEN THE SCREEN SHOWS NO PROMPTS WITH QUESTION MARKS.

OR TYPE [RETURN] UNTIL YOU GET PAST DRUM 8 TRACK D 2. THE COMPUTER WILL STORE YOUR REDEFINED DRUM NUMBERS AND VOLUMES IN MEMORY. THESE REDEFINED DRUM NUMBERS ARE PART OF THE INFORMATION SAVED TO DISKETTE USING A SAVE (7) OPERATION.

DRUMS (1) MIDI DRUM SONGSTEPPER ONLY: Each time you start a new song using MIDI DRUM SONGSTEPPER, the computer loads the MIDI DRUM DEFAULT described in the MASTER MENU section of this manual. THIS DEFAULT PROGRAMMING IS:

DRUM GRID #	SOUND
	TRACK D1
1	HI HAT OPEN
2	HI HAT CLOSED
3	CRASH CYMBAL
4	TOM 1

5	TOM 2
6	SNARE DRUM
7	RIM SHOT
8	BASS DRUM

TRACK D2

1	RIDE CYMBAL
2	TAMBOURINE
3	HAND CLAPS
4	TOM 1 ACCENT
5	CABASA
6	SNARE DRUM ACCENT
7	COWBELL
8	BASS DRUM ACCENT

These assignments tell MIDI DRUM SONGSTEPPER which MIDI NUMBER AND VOLUME to send to the W-OUT jack to represent a specific number you enter on the DRUMS (1) segment grid.

It is possible to ALTER these drum assignments for EACH SONG you create, using this MIDI DRUM ASSIGN command [M].

That is, if you have a MIDI drum machine connected to W-OUT, and are using MIDI DRUM SONGSTEPPER, you can determine which sound you get when you enter a digit, say "1" on the DRUMS (1) segment grid! FOR EACH SONG!

These alterations will be retained when you SAVE (7) the song. That is, EACH SONG CAN HAVE CUSTOMIZED DRUMS (1) SEGMENT MIDI DRUM NUMBER/VOLUME ASSIGNMENTS. Here's how:

Display any DRUMS (1) segment while using MIDI DRUM SONGSTEPPER.

Type [M] to initiate the prompts shown above.

Type [RETURN] until the drum number from 1-8, and the drum track D1 or D2 of interest are displayed.

Type ANY KEY EXCEPT [RETURN] when the drum number/track of interest is displayed on the prompt.

The prompts then ask you to accept current programming or to type [--] a new MIDI drum number (two-digit), and then [RETURN]. The drum machine manufacturer has adopted a scheme that associates a MIDI number with a particular sound. Consult your drum manual for this two digit number.

The next prompt then asks you to accept current programming or type [--] a new MIDI volume number from 0 (zero) which is silence, to 127 which is loudest, then [RETURN].

Finally, you must accept current programming or enter a 0 (zero) or a 1, then [RETURN] to program the associated DRUM TRIGGER OUTS jack on the SONG PRODUCER on/off.

If you program DRUM 3, TRACK D 2, with TRIGGER=1, the DRUM TRIGGER OUTS jack 3 will deliver a trigger any time the digit 3 is encountered on a segment whose name is PLACED IN DRUM TRACK D2 on the SCORE (5), and the song is played.

See especially the AT DRUM TRACK? command [@] .

See also discussion of (5) DEFINE DEFAULT DRUMS in the "MASTER MENU" section of this manual.

//

MIDI PLAYBACK ASSIGN ------------------ [M]

THIS COMMAND CAN BE GIVEN ONLY WHEN AN EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT IS ON THE SCREEN.

SCREEN PROMPTS:	YOUR RESPONSE:
MIDI CHANNEL?	type [-] then [RETURN]

EDIT MUSIC (3) and RECORD MUSIC (4): The MIDI PLAYBACK ASSIGN command [M] determines which bus/channel will play an EDIT MUSIC (3) or RECORD MUSIC (4) segment when you type [P] to Play.

THIS COMMAND MUST BE GIVEN EACH TIME YOU LOAD SONGSTEPPER OR MIDI DRUM SONGSTEPPER. THE SYSTEM DOES NOT STORE MIDI PLAYBACK ASSIGNMENT ON DISKETTE. Once the command has been given, the CURRENT MIDI PLAYBACK ASSIGN bus/channel is stored IN MEMORY, and remains unchanged until you give this command again.

YOU DO NOT HAVE TO GIVE THIS COMMAND EACH TIME YOU PLAY AN EDIT MUSIC (3) OR RECORD MUSIC (4) SEGMENT.

The range of choices for your response [-] to this prompt for a BUS is among the letters W, X, Y, or Z. The range of choice for a CHANNEL is from 2 through 9. As always, channels 2-9 are available exclusively at the Z-OUT MIDI output.

To illustrate, connect the X-OUT MIDI output to the MIDI INPUT of the instrument you are using to program/perform EDIT MUSIC (3) and RECORD MUSIC (4) segments. That is, the instrument whose MIDI OUTPUT you have connected to MIDI IN on the SONG PRODUCER.

Type [M] then [X] then [RETURN].

Now, the "X" instrument both "records" AND "plays back" the music segment using the same MIDI program number you happen to have on that instrument. This command simply lets you tell the computer "play back on the instrument I tell you to."

Any of the W, X, Y, OR Z-OUT MIDI outputs may be connected to the MIDI IN of the "programming" instrument. Buses W, X, Y, or Z are available at those respective W-OUT, X-OUT, Y-OUT, and Z-OUT MIDI outputs. Channels 2 through 9 are available at the Z-OUT MIDI output.

Connection to an instrument other than the instrument used to INPUT, or program information is possible, but has doubtful purpose. The primary purpose of this command is to allow you to playback on the same bus/channel that you enter/play notes on.

//

NEW SEGMENT (SAME MODE) --------------- [N]

SCREEN PROMPTS:	YOUR RESPONSE:
SEGMENT NAME?	type [--] then [RETURN]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): The NEW SEGMENT (SAME MODE) command [N] is used primarily when you wish to create several segments OF THE SAME MODE, one after the other.

For instance, when a DRUMS (1) segment is on the screen, type [N] and the screen will ask for a segment name . . .

If you enter a "new" segment name (one that has NOT been used/saved previously) and type [RETURN], a blank DRUMS (1) segment with the new name will appear, ready for programming BECAUSE A DRUMS (1) SEGMENT WAS ON THE SCREEN WHEN YOU GAVE THE [N] COMMAND.

[N] GETS YOU A BLANK SEGMENT OF THE SAME MODE ONLY WHEN YOU ENTER A NEW (UNUSED) SEGMENT NAME. [N] IS USEFUL WHEN YOU HAVE CREATED OR ARE DISPLAYING A SEGMENT AND WISH TO CREATE ANOTHER SEGMENT OF THE SAME MODE IMMEDIATELY.

If you enter an "old" segment name (one that HAS already been used/saved and type [RETURN], that old segment DRUMS (1), EDIT MUSIC (3), or RECORD MUSIC (4), will be displayed REGARDLESS OF ITS MODE.

[N] GETS YOU ANY MODE OF SEGMENT: DRUMS (1), EDIT MUSIC (3), OR RECORD MUSIC (4) THAT HAS BEEN SAVED WHEN YOU ENTER THAT SAVED SEGMENT'S NAME.

The [N] command with its "new/old" feature is a shortcut that can bypass the MENU page. It can take you to any EXISTING segment of ANY mode when you enter that segment's name.

In any case, the [n] command takes you to a New video page.

//

NEW SEGMENT (ALTERNATE MODE) ---------- [SHIFT][N]

SCREEN PROMPTS:	YOUR RESPONSE:
NEW SEGMENT?	type [--] then [RETURN]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): The NEW SEGMENT (ALTERNATE MODE) command [SHIFT][N] command lets you ALTERNATE programming of a MUSIC (3 or 4) mode with the DRUMS (1) mode.

For example, when a DRUMS (1) segment is on the screen, type [SHIFT][N] and the screen will ask for a segment name. The name you select is important. It will determine the mode you go to next.

If you enter a NEW name, you will go to the ALTERNATE mode--a MUSIC (3 or 4) segment in this example. There are two modes of MUSIC segments. You will go to the mode, RECORD MUSIC (4) or EDIT MUSIC (3) that you LAST DEALT WITH.

If you enter an OLD name that is already in memory, you will immediately be taken to that segment, REGARDLESS OF ITS MODE.

This [SHIFT][N] command gives you an easy way to alternate between MUSIC (3 or 4) and DRUMS (1) segment modes when creating NEW segments, or a way to access an OLD segment of ANY MODE, without having to go to the MENU.

THE [SHIFT][N] COMMANDS GIVES YOU AN EASY WAY TO ALTERNATE BETWEEN DRUM AND MUSIC MODES WHEN CREATING SEGMENTS (USE NEW NAMES EXCLUSIVELY). OR, LIKE ITS SISTER [N] COMMAND, A WAY TO GET TO ANY EXISTING SEGMENT, REGARDLESS OF ITS MODE. [N]

//

NEW TRANSPOSE SEGMENT ---------------- [N]

THIS COMMAND CAN BE GIVEN ONLY WHEN A TRANSPOSE (2) SEGMENT IS ON THE SCREEN.

SCREEN PROMPTS:	YOUR RESPOSE:
TRANSPOSE NAME?	type [A-O] or type [A-M] then [RETURN]

If the single letter name you enter has already been used, the TRANSPOSE (2) segment by that name has already been programmed. You are given the option to "redo" or reprogram that TRANSPOSE (2) segment or merely view it:

SCREEN PROMPTS:	YOUR RESPONSE:
REDO SEGMENT?	type [Y] or [N] then [RETURN]

TRANSPOSE (2): The NEW TRANSPOSE SEGMENT command [N] lets you travel among TRANSPOSE (2) segments.

The first prompt requires, for SONGSTEPPER, a single letter name using letters A-O. MIDI DRUM SONGSTEPPER allows letters A-M.

The second prompt "REDO SEGMENT?" appears ONLY if the segment you name in the first prompt is currently programmed. Answer [Y] ONLY if you wish to DESTROY the current programming and START WITH AN EMPTY SEGMENT. Answer [N] if you wish to simply look at the segment, or if you want to "edit."

To edit, use the [INST DEL] key to (repeatedly) delete the LAST note of the TRANSPOSE (2) segment.

See also DELETE TRANSPOSE NOTE command [INST DEL].

//

OOPS! ------------------------------ [SHIFT][O]

SCORE (5): The OOPS! command [SHIFT][O] works exclusively in the SCORE (5) to restore an entry that is accidentally deleted.

This command may be used in two ways. The "overwrite restore" usage allows you to "overwrite" an existing entry with a new entry and restore the OLD entry with an OOPS! command.

The "defeat delete" usage lets you restore, under certain conditions, an entry deleted.

OVERWRITE RESTORE

Move the cursor to an entry and "overwrite" that entry by typing in another COMPLETE entry--YOU MUST FINISH THE NEW ENTRY BEFORE GIVING THE OOPS! COMMAND

Then type [SHIFT][O] to restore the OLD, or "overwritten" entry that was originally there. DO NOT MOVE THE CURSOR OR GIVE ANOTHER COMMAND BEFORE OOPS!

A BLANK results if you fail to complete the new entry prior to giving the OOPS! command. In this case, give the OOPS! command AGAIN to restore the "old" entry.

DEFEAT DELETE

Type [SHIFT][O] to restore an entry deleted using [D] or [INST DEL]. The restored entry will reappear in the score line of the cursor's present position at the time the OOPS! command is given. The cursor may be moved at will before the OOPS! command [SHIFT][O] command is given in this case. BUT, no other commands may be given before OOPS! or the entry will be lost. This is a handy way of moving an entry.

Please be aware that all deletes are NOT equal. The [D] version causes a move of cursor. YOU CAN NOT SIMPLY FOLLOW ANY DELETE COMMAND WITH THE OOPS! COMMAND AND RESTORE THINGS AS THEY WERE! BE AWARE OF CURSOR POSITION AT THE TIME THE OOPS! COMMAND IS GIVEN.

See also the various DELETE commands to learn their cursor behavior.

DO NOT CONFUSE THE TWO USES OF THIS COMMAND. If you move the cursor to an entry and DELETE that entry, then type another entry, and THEN give the OOPS! command, you will indeed restore the previous "entry," which is a BLANK! The blank occurs because of the delete and is the "entry" that immediately precedes the one you type in! This command, like all computer commands is quite literal, and will do what it has been programmed to do.

//

PLAY THE SCORE ------------------------- [f1]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type the first function key, [f1] to play the SCORE (5) using the internal SONG PRODUCER clock.

The SCORE (5) will always beginning playing at the score line with the)))))) symbols.

The SCORE (5) does not have to be on the screen to be played. That is, you can look at a segment while listening to the SCORE (5).

The PLAY THE SCORE command [f1] is a "global" command. It can play the SCORE (5) when the SCORE (5) is NOT on the screen.

THE SCORE (5) CANNOT BE PLAYED WHILE VIEWING A TRANSPOSE (2) SEGMENT, however. Return to the MENU using [f5]. Then go to the SCORE (5) or another applicable mode.

NOTE: When the MENU is on the screen, [f1] will not play the SCORE (5). You must type the MENU number (5) that takes you to the SCORE (5) or another applicable mode, type [RETURN], and then type [f1] to hear the SCORE (5).

TO STOP PLAYING THE SCORE (5) TYPE THE [f3] FUNCTION KEY.

//

PLAY THE SCORE (SYNC) ------------------ [SHIFT][f1]
or [f2]

SCORE (5): The PLAY THE SCORE (SYNC) command [SHIFT][f1] can be given only when the SCORE (5) is on the screen.

Type [SHIFT][f1], which is known as the [f2] function key.

The box at the upper right of the screen will display "SYNC MODE." The SCORE (5) will start playing from the ›››››› symbols WHEN THE EXTERNAL CLOCK CONNECTED TO THE CLOCK IN JACK ON THE SONG PRODUCER IS STARTED.

TO STOP PLAYING THE SCORE (5) TYPE THE [f3] FUNCTION KEY OR STOP THE EXTERNAL CLOCK.

When the SCORE (5) is stopped, the SYNC MODE is canceled. Type [SHIFT][f1] to return to the SYNC MODE.

Or type the [f1] function key to play the SCORE (5) using the INTERNAL SONG PRODUCER clock.

//

PLAY THIS SEGMENT --------------------- [P]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type [P] to play the segment that is on the screen.

NOTICE: THIS PLAYBACK OCCURS IN ONLY ONE BUS OR CHANNEL. You MUST use the MIDI PLAYBACK ASSIGN command [M] to tell the system WHICH bus or channel you wish to play when you type [P] EACH TIME YOU LOAD SONGSTEPPER OR MIDI DRUM SONGSTEPPER.

And you must be sure that an instrument is connected to the appropriate MIDI output, W-OUT, X-OUT, Y-OUT, or Z-OUT.. If you do not assign MIDI PLAYBACK properly, and make appropriate connections, the screen will show that you are in the PLAY mode, but no sound will be heard!

When the SCORE (5) is on the screen, the SCORE (5) will play when you type [P], beginning with the score line with the ›››››› symbols. This is an alternative to the global PLAY SCORE command [f1]. The SCORE (5) will play regardless of the status of playback specified by the MIDI PLAYBACK ASSIGN command [M].

TO STOP PLAYING, TYPE [f3].

//

PRINT SEGMENTS (THIS MODE) ------------ [SHIFT][£]

DRUMS (1) or EDIT MUSIC (3): Type the "Shift/Pound Sterling" [SHIFT][ ] keys to cause the printer to print

ALL segments of the mode (1 or 3) on display at the time of the command. TRANSPOSE (2) segments cannot be printed.

THIS SOFTWARE CURRENTLY SUPPORTS THE COMMODORE MODELS 1525 AND 801 PRINTERS. OTHER PRINTERS MAY WORK, BUT YOU SHOULD TRY BEFORE YOU BUY.

///

PRINT THIS SEGMENT ------------------- [£]

DRUMS (1) or EDIT MUSIC (3): Type the "Pound Sterling" [£] key to print the segment currently displayed on the screen.

THIS SOFTWARE CURRENTLY SUPPORTS THE COMMODORE MODELS 1525 AND 801 PRINTERS. OTHER PRINTERS MAY WORK, BUT YOU SHOULD TRY BEFORE YOU BUY.

///

PRINT SCORE SCREEN ------------------- [£]

SCORE (5): Type the "Pound Sterling" [£] key to print the portion of the SCORE (5) currently displayed on the screen.

See also FIRST LINE ON VIDEO command [F].

THIS SOFTWARE CURRENTLY SUPPORTS THE COMMODORE MODELS 1525 AND 801 PRINTERS. OTHER PRINTERS MAY WORK, BUT YOU SHOULD TRY BEFORE YOU BUY.

///

PRINT WHOLE SCORE -------------------- [SHIFT][£]

SCORE (5): Type the "Shift/Pound Sterling" [SHIFT][£] keys to print the ENTIRE SCORE (5), from score lines 1 through 120.

THIS SOFTWARE CURRENTLY SUPPORTS THE COMMODORE MODELS 1525 AND 801 PRINTERS. OTHER PRINTERS MAY WORK, BUT YOU SHOULD TRY BEFORE YOU BUY.

///

RECORD MUSIC (START) ----------------- [SPACE BAR]

RECORD MUSIC (4): TAP AND QUICKLY RELEASE the [SPACE BAR] to start recording a RECORD MUSIC (4) segment.

HOW YOU TYPE THE [SPACE BAR] IS IMPORTANT

The [SPACE BAR] is a "repeating" key; it spaces repeatedly while it is held down. Since the [SPACE BAR] both starts AND stops & erases recording, it is important to NOT HOLD THE [SPACE BAR] DOWN to start a recording.

If you type it, and don't GET OFF OF IT it, the [SPACE BAR] will alternately start, then erase, then start, then erase, etc. TAP IT! It's an easy skill to learn, and the [SPACE BAR] is easy to find!

NUMBER OF NOTES ALLOWED IN A RECORD MUSIC (4) RECORDING

You may record a MAXIMUM of 120 "EVENTS" in a RECORD MUSIC (4) segment.

> The MIDI keyboard you use for recording is perceived by the system as a MONOPHONIC, single-trigger, low note priority keyboard.
>
> An "event" is defined as a CHANGE of pitch OR a CHANGE of trigger status ON/OFF.
> So, slurred notes create FEWER events than articulated notes, since notes slurred together do not require a CHANGE of trigger, ONLY a CHANGE of pitch.
>
> The RECORD MUSIC (4) segment will record between 60-120 notes depending on how you play.

RUNNING "OUT OF MEMORY" WHEN RECORDING

If you exceed the limit of 120 EVENTS, the screen will advise that you are OUT OF MEMORY. DO NOT SAVE A SEGMENT TO MEMORY THAT HAS CAUSED THIS "OUT OF MEMORY" PROMPT.

Rerecord. Play fewer notes, or slur more notes together. Or divide the passage and use TWO RECORD MUSIC (4) segments to record it.

See especially the RECORD MUSIC (4) TIMING PROMPTS part of the MENU MODES entry in this dictionary.

See also the RECORD MUSIC (STOP & ERASE) command [SPACE BAR] below.

//

RECORD MUSIC (STOP & ERASE) ----------- [SPACE BAR]

RECORD MUSIC (4): Tap and release the [SPACE BAR] to STOP AND ERASE the recording of a RECORD MUSIC (4) segment any time before it reaches its ending.

HOW YOU TYPE THE [SPACE BAR] IS IMPORTANT

The [SPACE BAR] is a "repeating" key; it spaces repeatedly while it is held down. Since the [SPACE BAR] both starts AND stops & erases recording, it is important to NOT HOLD THE [SPACE BAR] DOWN to stop a recording.

If you type it, and don't GET OFF OF IT it, the [SPACE BAR] will alternately, stop and erase, then start, then stop and erase, then start, then erase, etc.

TAP IT! It's an easy skill to learn, and the [SPACE BAR] is easy to find!

USE [SPACE BAR] TO STOP AND ERASE. NOT TO END RECORDING!

Use the [SPACE BAR] to stop ONLY when you want to erase and re-record; after an error.

ALWAYS LET THE COMPUTER END THE RECORDING OF A RECORD MUSIC (4) SEGMENT WHEN YOU ARE SATISFIED WITH YOUR PERFORMANCE. YOU TELL THE COMPUTER HOW LONG YOU WANT TO RECORD BY ANSWERING PROMPTS. THE COMPUTER AUTOMATICALLY ENDS THE RECORDING AT THIS ENDING POINT. USE OF THE [SPACE BAR] TO STOP RECORDING ALWAYS ERASES EVERYTHING THAT HAS BEEN RECORDED SO FAR, MAKING IT NECESSARY TO RE-RECORD!

IF YOU RECORD A RECORD MUSIC (4) SEGMENT AND THEN DECIDE YOU DON'T LIKE IT, SIMPLY RECORD IT AGAIN. THE NEW RECORDING "OVERWRITES" THE OLD ONE, DESTROYING THE OLD VERSION, JUST LIKE A TAPE RECORDER.

///

REPLACE NOTE -------------------------- [↑]

EDIT MUSIC (3): The REPLACE NOTE command [↑] lets you change the pitch of a note without changing its duration, using the up-arrow key.

Place the cursor under the note to be replaced.

Play the new note on the MIDI keyboard whose MIDI OUTPUT is attached to the SONG PRODUCER'S MIDI IN. SEE: ENTER NOTE/REST (MIDI) command.

Type [↑], the up-arrow key. The note will change and retain its old duration.

IF YOU HAVE NO MIDI KEYBOARD FOR ENTRY:

Place the cursor under the note to be replaced.

Use the [*] entry method to enter the new note octave/name from the computer keyboard. SEE: ENTER NOTE/REST (COMPUTER) command. (Do not enter a duration).

Type the [↑] up-arrow key.

///

RESET ---------------------------------- [RUN STOP][RESTORE]

TYPE THESE TWO KEYS: [RUN STOP][RESTORE] IF ALL ELSE FAILS. THAT IS, IF YOUR COMPUTER TEMPORARILY HANGS UP AND WON'T RESPOND (IT HAPPENS). BE SURE YOU TYPE THE [RUN STOP] KEY FIRST AND HOLD IT DOWN WHILE TYPING THE [RESTORE] KEY. THE SCREEN RESPONDS:

SCREEN PROMPTS:	YOUR RESPONSE:
KEEP ------------- IN MEMORY?	type [Y] or [N] then [RETURN]

The prompt will display the name ------------- of the song currently in memory.

Type [Y] to KEEP that song in memory and proceed with programming.

Type [N] to DESTROY your song in memory, an unlikely choice! This does not destroy anything stored on the diskette.

In either case, you will be returned to the MENU.

IF YOU TYPE [Y], RETURN TO THE SEGMENT OR SCORE (5) YOU WERE WORKING ON BEFORE YOU GAVE THE RESET COMMAND. THE SYSTEM ALWAYS "SAVES" SEGMENTS TO MEMORY WHEN YOU LEAVE A SEGMENT MODE. A RESET CAN UPSET THIS NORMAL "SAVE," AND CREATE GARBAGE NUMBERS. ALWAYS COMPLETE OR "CLEAR" ANY RELEVANT SEGMENT IMMEDIATELY AFTER A RESET.

USE THE RESET COMMAND AS A LAST RESORT. DO NOT RESET TO AVOID ANSWERING AN PROMPT UNLESS ABSOLUTELY NECESSARY.

//

SHOW OTHER SCORE VOICES --------------- [/] or [SHIFT][/]

SCORE (5): SONGSTEPPER or MIDI DRUM SONGSTEPPER has 8 voices V1-V8. The video screen can show only 4 of these voices at a time. The SHOW OTHER SCORE VOICES command [/] or [SHIFT][/] (which is the same as [?]) lets you view, alternately, voices V1-V4, then V5-V8.

Note that both shifted and unshifted use of the [/] key produces the same result.

NOTE ALSO THAT THE CURSOR REMAINS IN THE SAME POSITION RELATIVE TO THE SCREEN BEFORE AND AFTER THIS COMMAND IS COMPLETED. THAT IS, IF THE CURSOR IS IN COLUMN V3 BEFORE THE COMMAND IS GIVEN, IT WILL BE IN COLUMN V7 AFTER THE COMMAND IS COMPLETED.

See also the CURSOR TO VOICE 5 command [.] or [SHIFT][.] and the CURSOR TO VOICE 4 command [,] or [SHIFT][,]. Both of these commands let you see the "other" SCORE (5) voices, with a CHANGE of cursor position relative to the screen on completion of the command.

//

SLUR/TIE -------------------------------- [S]

EDIT MUSIC (3): This SLUR/TIE command [S] is an alternative to note entry using [RETURN].

Use either method of entering a note: see ENTER NOTE/REST (COMPUTER) command and ENTER NOTE/REST (MIDI) command.

Enter the note by typing [S] rather than [RETURN]. The display will show a note followed by a curved line.

This curved line, or mark becomes a "slur" (connected pitch transition) if the NEXT note entered is a different pitch.

The mark becomes a "tie" if the NEXT note entered is the same pitch. Notes of the same pitch may be "tied" together to create a longer combined DURATION.

The system will ERASE the slur mark if the next entry is a REST. Slurring to a rest makes no musical sense.

THIS COMMAND CAUSES ENTRY OF A NOTE WITH A SLUR MARK. THE PITCH AND DURATION OF THE NOTE ENTERED ARE DETERMINED BY THE CURRENT VALUES OF THE PITCH AND DURATION BUFFERS. THIS COMMAND DOES NOT "ADD" THE SLUR MARK TO AN EXISTING NOTE WITHIN AN EDIT MUSIC (3) SEGMENT. IT ENTERS A NOTE THAT HAS A SPECIFIC PITCH AND DURATION THAT HAS A SLUR MARK.

See Harvard Dictionary of Music for "slur" and "tie."

//

STOP PLAYING! ------------------------- [f3]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type the [f3] function key to stop the playing of any segment (1), (3), (4), or the SCORE (5).

Type the [f3] function key to stop the playing of the SCORE (5) when in SYNC MODE. That is, type [f3] to stop a song when an external clock is playing the song, OR stop the external clock to stop the song.

The [f3] function key has no purpose when a TRANSPOSE (2) segment is on the screen.

//

SYNC DEFINE --------------------------- [SHIFT][S]

SCORE (5): This command provides alternative access to the prompts that let you define clock rate(s), particularly for the purpose of syncing the SONG PRODUCER to an external device using the CLOCK OUT jack.

Type [SHIFT][S] when the SCORE (5) is on the screen and "define sync" by answering prompts on the screen.

For a description of possibilities, see MENU MODES, alternative (9) DEFINE SYNC; and the USER OPTION (DEFINE SYNC) command [U].

//

TEMPO (MASTER) ------------------------- [SHIFT][T]

SCREEN PROMPTS:	YOUR RESPONSE:
CURRENT TEMPO IS ---- NEW TEMPO?	[RETURN] no change or type [--.--] [RETURN] for new

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): This command determines how fast your song will play. With a DRUMS (1), EDIT MUSIC (3) , RECORD MUSIC (4) segment, or the SCORE (5) on the screen, type [SHIFT][T]. The screen will display the number of the current master tempo and ask you for a new tempo.

To accept the current tempo displayed in the prompt, simply type [RETURN].

To enter a new tempo, type any number between 1 and 10, using as many as TWO DECIMAL PLACES if you like (3.45 and 7.39 are valid tempos). Type [RETURN] to enter the new tempo.

TEMPOS ARE LIKE ANIMALS. SMALL ONES MOVE FAST AND BIG ONES MOVE SLOW. THE NUMBER 1 IS THE FASTEST, 10 IS THE SLOWEST. BIG IS SLOW. SMALL IS FAST.

You may discover that the master tempo you entered using two decimal places or whole numbers may be displayed using many MORE decimal places the next time you look at the master tempo by doing a [SHIFT][T]. This is OK; it's caused by the particular way computers look at numbers. You have well over a thousand different tempi (plural for tempo) at your command!

The TEMPO (MASTER) command [SHIFT][T] provides tempo control for a song. This tempo is stored with the song, but can be edited, like many characteristics. THIS IS A GLOBAL COMMAND. IT AFFECTS THE ENTIRE SONG, EVERY SEGMENT ON THE SCORE (5) UNIFORMLY.

See also the TIMING A SEGMENT command [T] which affords control over a single segment's TIMING, including the playback speed of that segment relative to other segments.

THE MASTER TEMPO NUMBER DOES NOT CONTROL PLAYBACK SPEED WHEN AN EXTERNAL CLOCK IS USED TO PLAY THE SONG. The TEMPO (MASTER) command [SHIFT][T] may not be used to change the playback speed of an EXTERNAL CLOCK used to play a song in the SYNC MODE.

//

TIMING A SEGMENT --------------------- [T]

DRUMS (1)

SCREEN PROMPTS:	YOUR RESPONSE:
NOTES/BEAT?	TYPE [1-8]* [RETURN]
BEATS/MEASURE?	TYPE [1-8]* [RETURN]
SEGMENT CLOCK 1:?	TYPE [1-32] [RETURN]

EDIT MUSIC (3)

SCREEN PROMPTS:	YOUR RESPONSE:
BEATS/MEASURE?	type [1-32] then [RETURN]
SEGMENT CLOCK 1:?	type [1-32] then [RETURN]

RECORD MUSIC (4)

SCREEN PROMPTS:	YOUR RESPONSE:
WHICH DRUM SEGMENT?	type [--] then [RETURN]
HOW MANY DRUM SEGMENTS LONG?	type [1- 8] then [RETURN]
RELATIVE TO SEGMENT CLOCK 1:1 BEATS/MEASURE IS?	type [1-32] then [RETURN]

DRUMS (1), EDIT MUSIC (3), RECORD MUSIC (4): When any eligible segment is ON THE SCREEN and you type [T], the computer will respond appropriately, with one of the sets of prompts shown above.

Changes made using this command affect ONLY the segment that is on the screen when the command is given.

THIS COMMAND IS NOT GLOBAL. IT DOES NOT AFFECT ALL SEGMENTS OF ONE MODE, NOR ANY SEGMENT OTHER THAN THE ONE ON THE SCREEN WHEN THE COMMAND IS GIVEN.

DRUMS (1)

YOU WANNA KEEP IT SIMPLE? OK. If you program some EDIT MUSIC (3) segments and don't monkey around with this command, their segment clocks will automatically be 1:4. That's the way the system starts out.

If you want to play some DRUMS (1) segments with your music without monkeying around, these DRUMS (1) segment clocks will also be 1:4, and a column on the drum grid is worth ONE 16TH NOTE OR ONE 16TH REST. Program accordingly!

STILL WORKING FROM THE EYEBALLS DOWN? OK. Use the TIMING A SEGMENT command [T] to change the SEGMENT CLOCK number of the DRUMS (1) segments to 1:2, and a column on the drum grid is worth ONE 32ND NOTE OR 32ND REST when you play it on the SCORE (5) along with your non-monkeyed music.

Use this command to change the SEGMENT CLOCK number of the DRUMS (1) segments to 1:1, and a column on the drum grid is worth ONE 64TH NOTE OR 64TH REST when played with music that has not gone ape. What about NOTES/BEAT and BEATS/MEASURE? That's just about the way things look. All notation is vanity.

DO YOU WANT TO KNOW WHAT IS REALLY GOING ON WITH SEGMENT TIMING? RIGHT ON. I'LL WRITE ON. (READ ON).

When you first create a DRUMS (1) segment, the computer automatically assigns a value of 4 to each of the DRUMS (1) prompt categories. This is said to happen by "default," meaning without requiring your attention. This timing "default" sets up your DRUMS (1) segments in 4/4 time, or 4 BEATS/MEASURE with sixteen drum grid columns per measure, or 4 NOTES/BEAT. A "measure" of 4/4 on a DRUMS (1) segment is the number of columns it takes to count from 1 through 4 UP TO 1 of the next measure.

THE BEAT NUMBERS THAT COMPRISE A MEASURE APPEAR OVER THE TOP ROW ON EACH DRUM GRID. THESE NUMBERS SHOW WHICH BEAT FALLS ON WHICH GRID COLUMN. SOMETIMES THE BEATS ARE DIVIDED, SIGNIFIED BY LETTERS, SUCH AS "E, A, D," AND SYMBOLS SUCH AS "+". FOR INSTANCE "1 E + A 2 E + A" IS COUNTED OUT LOUD AS "ONE E AND UH 2 E AND UN" AND SO FORTH. AND "1 + D" IS "ONE AND DUH", etc. This "counting" information is strictly for your benefit. The machine never makes a mistake... mistake... mistake.

THE BEATS/MEASURE NUMBER

THE BEATS/MEASURE NUMBER DOES NOT AFFECT DRUMS (1) PLAYBACK SPEED.

One of the uses of the TIMING command [T] is to create measures with other TIME SIGNATURES such as 3/4, 5/4, etc. by changing the BEATS/MEASURE number.

The BEATS/MEASURE number for DRUMS (1) segment timing is only a CONVENIENCE FOR THE COMPOSER. It lets you specify how many beats (quarter notes) appear in a "measure." The number entered here does NOT affect segment playback speed.

This number determines the highest number "counted to" before a measure ends and the next measure starts with "1" again. This count is reflected by the numbers, letters, and symbols on the display above the top drum grid row.

THE NOTES/BEAT NUMBER

The NOTES/BEAT prompt, notes per beat, applies only to DRUMS (1) segment timing.

THE NOTES/BEAT NUMBER DOES NOT AFFECT DRUMS (1) SEGMENT PLAYBACK SPEED.

THE SPEED AT WHICH DRUM GRID COLUMNS GO BY AS THEY ARE PLAYED IS CONSTANT FOR A GIVEN SEGMENT CLOCK. ONLY A CHANGE IN SEGMENT CLOCK NUMBER CHANGES PLAYBACK SPEED.

THE GRID OF THE DRUMS (1) SEGMENT IS LIKE A PLAYER PIANO ROLL. THE GRID "PLAYS" FROM LEFT-TO-RIGHT. ONE UNIT OF SPACE (A GRID COLUMN) ON THE ROLL REPRESENTS ONE UNIT OF TIME WHEN THE "ROLL" IS PLAYED. FOR A FIXED PLAYBACK SPEED (SEGMENT CLOCK) ANY COLUMN HAS A FIXED DURATION, REGARDLESS OF "BEAT" INFORMATION THAT APPEARS AT THE TOP OF THE DRUM GRID.

The NOTES/BEAT number is a CONVENIENCE FOR THE COMPOSER that redistributes the "1 E + A" etc. beat divisions over the top row on the drum grid. These divisions help you keep track of RELATIVE duration values when creating a DRUMS (1) segment.

BEATS/MEASURE AND NOTES/BEAT NUMBERS TOGETHER

The BEATS/MEASURE and NOTES/BEAT numbers have NO effect on how a DRUMS (1) segment sounds when you play it!

You can prove this. Create a DRUMS (1) segment normally, without changing the default number--4--the computer provides for each DRUMS (1) timing category.

Play the segment (type [P]).

Type [T] and change the NOTES/BEAT and/or the BEATS/MEASURE numbers. BE SURE YOU DO NOT CHANGE THE SEGMENT CLOCK NUMBER. ALWAYS TYPE [4] FOR THE SEGMENT CLOCK PART OF THE PROMPT.

Play the DRUMS (1) segment after these changes. It may LOOK different, that's notation! BUT A CHANGE OF THE NOTES/BEAT OR BEATS/MEASURE DOES NOT CHANGE THE SOUND OF A DRUMS (1) SEGMENT!

* The video display LIMITS the range of the COMBINATION of numbers you are allowed to provide for NOTES/BEAT and BEATS/MEASURE categories. That is, the DRUMS (1) grid can contain only 40 drum grid columns on a single page. And the system restricts display of a DRUMS (1) segment to NOTES/BEAT and BEATS/MEASURE numbers that, when multiplied, do NOT require more than 40 drum grid columns, A SINGLE PAGE.

For example, if you type [8] for NOTES/BEAT, the maximum BEATS/MEASURE number the system will accept is [5]. Because 8x5=40. The number limits for these two timing categories are INTERRELATED.

THIS SYSTEM RESTRICTION ON THE ALLOWABLE RANGE OF NUMBERS FOR NOTES/BEAT VERSUS BEATS/MEASURE DOES NOT MEAN THAT A VALID DRUMS (1) SEGMENT MUST BE ONLY ONE PAGE LONG! THE RESTRICTION MERELY DEFINES THE CHARACTERISTICS OF A VALID DRUMS (1) SEGMENT.

A VALID DRUMS (1) SEGMENT CAN COMPRISE MANY VIDEO PAGES! BUT A VALID DRUMS (1) SEGMENT NOTES/BEAT VERSUS BEATS/MEASURE NUMBERS, WHEN MULTIPLIED, MAY NOT EXCEED 40, OR IT WILL BE IMPOSSIBLE TO DISPLAY THAT DRUMS (1) SEGMENT IN THE FIRST PLACE.

As you will learn, this restriction is strictly in notation. You can create virtually any time signature in sound.

THE SEGMENT CLOCK NUMBER

THE SEGMENT CLOCK NUMBER IS THE ONLY DRUMS (1) SEGMENT TIMING NUMBER THAT AFFECTS PLAYBACK SPEED.

Segment clock numbers express RATIOS, or RELATIVE playback speeds among individual segments. A change in segment clock will change the playback speed of that segment RELATIVE to other segments in the song.

The fastest segment clock possible is 1:1. The slowest is 1:32. The 1:32 segment clock is THIRTY-TWO TIMES SLOWER than the 1:1 segment clock. REMEMBER, LITTLE THINGS MOVE FAST; BIG THINGS MOVE SLOW. Note that only the second number of the ratio changes.

If you change a DRUMS (1) segment clock from the default value of 1:4 to a segment clock of 1:2, that segment will play TWICE as fast. The duration of each column will be HALVED. Continue . . .

Now, suppose you give the TIMING A SEGMENT command [T] and enter a NOTES/BEAT of [8], a BEATS/MEASURE of [4], and a SEGMENT CLOCK? of [2]. You still have a 4/4 TIME SIGNATURE, but the division of the measure is 32 COLUMNS PER MEASURE because there are 8 NOTES PER BEAT.

A measure of 4/4 with a NOTES/BEAT of [8] spans TWICE as many columns as a measure of 4/4 with [4] NOTES/BEAT. TWICE as many columns takes TWICE as much time to play--remember our "player piano roll?"

OUR DRUMS (1) SEGMENT WITH THE "EXPANDED" [8] NOTES/BEAT MEASURE OF 4/4 TAKES TWICE AS LONG TO PLAY. BUT WE CAN ADJUST THE SEGMENT CLOCK OF THE EXPANDED SEGMENT TO PLAY THE SEGMENT TWICE AS FAST--1:2 TO MAKE UP FOR THIS.

The point is, you can stretch the measure over TWICE as many columns on the grid, and then DOUBLE the speed of the segment clock to improve the RESOLUTION of a DRUMS (1) segment. You are not stuck with 16TH note resolution, or 16TH notes as the smallest possible note value. Nominal resolution of a DRUMS (1) segment with a SEGMENT CLOCK of 1:4 IS 16th notes, relative to 16TH notes displayed in EDIT MUSIC (3) segments that also have 1:4 segment clocks.

But at a SEGMENT CLOCK of 1:2, the DRUMS (1) segment has a resolution of 32ND notes, relative to EDIT MUSIC (3) segments with 1:4 segment clocks. At 1:1 each drum column represents a 64TH note relative to other segments with 1:4 segment clocks.

BUT, WAIT A MINUTE! To have 64TH notes in 4/4 would require a NOTES/BEAT of 16, wouldn't it! And the system allows a maximum of 8 NOTES/BEAT for a DRUMS (1) segment!

WHO CARES!!! REMEMBER THAT IT REALLY DOESN'T MATTER HOW MANY NOTES/BEAT YOU SPECIFY. THE SEGMENT CLOCK NUMBER IS KING.

You want 64TH notes in your DRUMS (1) segment relative to MUSIC segments with 1:4 segment clocks?

TYPE [T].

REMEMBER TO ENTER A SEGMENT CLOCK OF "1" FOR THE DRUMS (1) SEGMENT.

Then enter 8 NOTES/BEAT and "think of" TWO measures on the grid as equivalent to ONE measure. SPREAD IT OUT! Then specify a SEGMENT CLOCK of 1:1 and listen to those fast feets! EVERYTHING IN SONGSTEPPER AND MIDI DRUM SONGSTEPPER IS RELATIVE, INCLUDING YOUR GREAT-UNCLE.

SPREAD IT OUT. SPEED IT UP. THIS IS THE GOLDEN RULE TO INCREASE DRUMS (1) SEGMENT RESOLUTION. YOU SIMPLY HAVE TO EXPERIMENT WITH IT TO GET A FEEL FOR IT.

EDIT MUSIC (3)

There are only TWO prompt categories when the TIMING A SEGMENT command [T] is given with an EDIT MUSIC (3) segment on the screen. Conspicuously ABSENT is the NOTES/BEAT portion of the prompt. For good reason.

All EDIT MUSIC (3) segments are capable of DISPLAYING no more than 4 notes per beat, that is, 16TH notes on the screen. THE SMALLEST NOTE DURATION THAT CAN BE DISPLAYED IS A 16TH NOTE. This restriction is strictly VISUAL, however, and does NOT mean you can't play 32ND or 64TH notes!

Remember that note values are RELATIVE. How "fast" is a quarter note in music? There is no absolute answer; it depends on musical context. All note values in a piece of music have durations RELATIVE to each other. That is, if quarter notes go by at a certain rate, then sixteenth notes will go by 4 times faster. A whole note will take the time of 4 quarter notes, and so forth.

SEGMENT CLOCK numbers determine the time RELATIONSHIPS AMONG DIFFERENT SEGMENTS. A segment clock of 1:4 is four times SLOWER that a segment clock of 1:1. A segment clock of 1:2 is two times FASTER than a segment clock of 1:4. The fastest segment clock is 1:1.

Say you have a string of 16TH notes in an EDIT MUSIC (3) segment whose segment clock is 1:4. Use the TIMING A SEGMENT command [T] to change the segment clock for that EDIT MUSIC (3) segment to 1:2. That is, type [2] then [RETURN] to answer the SEGMENT CLOCK? prompt.

What happens? That EDIT MUSIC (3) segment now plays back TWICE as fast. The duration of EVERY note in the segment is HALVED. So, what was a 16TH note at the 1:4 segment clock becomes a 32ND note when the segment clock is changed to 1:2. The string of notes is now 32ND notes.

IT IS MOST IMPORTANT TO NOTE THAT A CHANGE OF SEGMENT CLOCK NUMBER FOR AN EDIT MUSIC (3) SEGMENT NEVER CHANGES THE ACTUAL NOTATION DISPLAYED ON THE SCREEN. THIS IS NOT A TOTALLY FOREIGN CONCEPT. ALL SEQUENCERS ALLOW A GLOBAL "TEMPO" OR PLAYBACK SPEED CONTROL THAT AFFECTS THE ENTIRE SONG AND PLAYS THE SAME "NOTATION" FASTER OR SLOWER WITHOUT ACTUALLY CHANGING THAT "NOTATION." (UNFORTUNATELY, THIS NOTATION IS OFTEN NOT MADE VISIBLE TO THE COMPOSER!)

SONGSTEPPER AND MIDI DRUM SONGSTEPPER ALSO OFFER THIS SORT OF GLOBAL TEMPO CONTROL FOR THE WHOLE SONG. See the TEMPO (MASTER) command [SHIFT][T].

But the SEGMENT CLOCK? category for the TIMING A SEGMENT command [T] OFFERS MORE--LOCAL CONTROL OF EACH SEGMENT'S playback speed. That is, INDIVIDUAL control of the playback speed of every segment in the song.

Let's summarize the distinction between LOCAL and GLOBAL control:

> The TEMPO (MASTER) command [SHIFT][T], described elsewhere in this dictionary, provides the traditional GLOBAL control over the TEMPO or playback speed of the ENTIRE SONG.
>
> The TIMING A SEGMENT command [T] provides LOCAL control of the SEGMENT CLOCK or playback speed of each segment INDIVIDUALLY. The playback speeds are restricted to ratios in INTEGER, or whole numbers, from 1-32.

Such individual timing of segments provides for traditional musical possibilites such as instant "augmentation," or "diminution" of a theme or rhythmic pattern. (Consult Harvard Dictionary of Music). It also makes possible more-complicated time relationships.

THE BEATS/MEASURE NUMBER

The BEATS/MEASURE number in an EDIT MUSIC (3) segment determines how many beats will be displayed in each measure on the screen. A "beat" appears on the screen as a quarter note (black note with a stem--no flags).

The demarcation for a measure is a vertical BAR LINE, a line that passes through all lines of the STAFF, or group of 5 horizontal lines.

The BEATS/MEASURE number will change ONLY how the music looks--where the BAR LINES fall. Type [1-32] then [RETURN].

This number may be used to help you organize your thinking about various segments having different segment clocks, however. We have seen that the smallest note the screen will display is the 16TH note. We have also seen that, with a change of segment clock, this note may be HALVED, etc. to SOUND notes of shorter duration, e.g. 32ND, or 64TH notes.

This shortening of duration affects ALL notes of the segment, therefore the duration of the total measure. Suppose you have several identical copies of the same segment, each with a different segment clock: one at 1:4; another at 1:2; the last at 1:1. One way to think of this is that you could play the 1:1 segment FOUR times in the time you could play the 1:2 segment TWICE, in the time the 1:4 segment would play ONCE.

Since its up to you to keep things together in the SCORE (5) you might then consider the following truth table for segments having the SAME time signature. If you have ONE MEASURE of 4/4 at segment clock of 1:4, then:

1 MEASURE AT 4 BEATS/MEASURE AT SEGMENT CLOCK 1:4

EQUALS

2 MEASURES AT 4 BEATS/MEASURE AT SEGMENT CLOCK 1:2

EQUALS

4 MEASURES AT 4 BEATS/MEASURE AT SEGMENT CLOCK 1:1

This could help keep straight the NUMBERS OF MEASURES that are required to make the duration of segments with different segment clocks coincide. OR, YOU COULD USE AN ALTERNATE WAY OF THINKING. Change the BEATS/MEASURE number to reflect the SMALLEST relative note value dictated by the segment clock, and you will see that:

1 MEASURE AT 4 BEATS/MEASURE AT SEGMENT CLOCK 1:4

EQUALS

1 MEASURE AT 8 BEATS/MEASURE AT SEGMENT CLOCK 1:2

EQUALS

1 MEASURE AT 16 BEATS/MEASURE AT SEGMENT CLOCK 1:1

OK. Think of it this way. At segment clock 1:4 a beat is a QUARTER note and you must have 4 BEATS/MEASURE, or FOUR QUARTERS for 1 measure of 4/4 time.

At segment clock 1:2 the SOUND the quarter note on the screen makes is halved in duration, to become an EIGHTH note relatively, so you'll need 8 BEATS/MEASURE for 1 measure of 4/4 time.

At segment clock 1:1 it will take 16 BEATS/MEASURE, to make 1 measure of 4/4. That is, at 1:1 the SOUND the quarter note on the screen makes is a SIXTEENTH note relative to 1:4 notation.

Use either method. If you think of a better way to think about it, damn the torpedoes, full speed ahead. (Let me know how it works out. I'll be in the Officers' Quarters).

RECORD MUSIC (4)

WHICH DRUM SEGMENT?

The WHICH DRUM SEGMENT? prompt requests the two-character alphanumeric NAME of the DRUMS (1) segment that will accompany your recording of a RECORD MUSIC (4) segment you have named. Type [--] the name of that DRUMS (1) segment and then [RETURN].

All RECORD MUSIC (4) segments are accompanied by a DRUMS (1) segment each time the RECORD MUSIC (4) segment is recorded (or rerecorded). That is, the DRUMS (1) segment of your choice acts like a TEMPORARY metronome, a way to keep time when recording.

Your choice of the name of the DRUMS (1) segment in the WHICH DRUMS SEGMENT? prompt will determine the TIME SIGNATURE of the RECORD MUSIC (4) segment you record. That is, if you want to record a RECORD MUSIC (4) segment in 4/4 time, choose a DRUMS (1) segment that is in 4/4. If 3/4, choose a DRUMS (1) segment that is in 3/4, etc.

In fact, you can create DRUMS (1) segments specifically to aid your recording of RECORD MUSIC (4) segments. You don't have to use these DRUMS (1) segments in the SCORE (5).

THE USE OF A DRUMS (1) SEGMENT TO ACCOMPANY THE RECORDING OF A RECORD MUSIC (4) SEGMENT IS ONLY A TEMPORARY CONVENIENCE. NEITHER SEGMENT MUST NECESSARILY BE USED IN THE SCORE (5), AND NO COMPELLING LINK IS MADE BETWEEN THE DRUMS (1) AND RECORD MUSIC (4) SEGMENTS FOR INDIVIDUAL USE LATER.

SPECIFICATION, BY NAME, OF A DRUMS (1) SEGMENT THAT CURRENTLY EXISTS IS NECESSARY EVEN IF YOU DO NOT HAVE A DRUM MACHINE. YOU MUST PROVIDE THE NAME OF A VALID DRUMS (1) SEGMENT FOR THIS PROMPT.

IF YOU HAVE NO DRUM MACHINE

If you have no drum machine to actually play this "metronome," simply create a DRUMS (1) segment and enter any number, say "2," on the drum grid repeatedly to play eight 8TH notes to a measure, for example.

BE SURE TO "END" THE DRUMS (1) SEGMENT PROPERLY, using the END DRUM SEGMENT command [E].

Then connect the DRUM TRIGGER OUTS jack number "2" directly to a channel in your amplifier or mixer board. KEEP THE VOLUME LOW, then gradually turn it up. When that DRUMS (1) segment is played, by itself, OR as an accompaniment to recording a RECORD MUSIC (4) segment, a "trigger" is generated each time a "2" is encountered on the grid of that DRUMS (1) segment.

This trigger is a voltage spike that will create an audible "click" or "pop" when translated by a speaker. Every number entered on the drum grid will create a trigger at its associated DRUM TRIGGERS OUT jacks, when that DRUMS (1) segment is played. The number "2" is an example of the use of an arbitrary number and its associated DRUM TRIGGERS OUT jack on the SONG PRODUCER.

THE HOW MANY DRUM SEGMENTS? NUMBER

The number you provide to answer the HOW MANY DRUM SEGMENTS LONG? prompt determines the length of the associated RECORD MUSIC (4) segment. Type a number from [1-8], then [RETURN].

YOU DO NOT "END" THE RECORDING OF A RECORD MUSIC (4) SEGMENT. THE COMPUTER WILL END THE RECORDING EXACTLY AT THE RIGHT POINT. The length of a RECORD MUSIC (4) segment is determined by your choice of name for the WHICH DRUM SEGMENT? prompt, and choice of number for the HOW MANY DRUM SEGMENTS LONG? prompt. If the DRUMS (1) segment chosen is one "measure" long, and you specify 4 measures, the RECORD MUSIC (4) segment will be exactly 4 measures long.

WHEN YOU PRESS THE [SPACE BAR] TO BEGIN RECORDING, THE COMPUTER WILL PLAY THE CHOSEN DRUMS (1) SEGMENT ONE TIME BEFORE RECORDING STARTS. This is a "countoff" to let you hear the tempo. THEN THE COMPUTER WILL PLAY THE DRUMS (1) SEGMENT THE NUMBER OF TIMES YOU SPECIFIED IN THIS PROMPT AND AUTOMATICALLY END THE RECORDING.

That is, the computer always plays the specified DRUMS (1) segment ONE time more than the number you specify in this prompt. This first measure is used like someone counting off before the band starts. As Mr. Welk would say, "AN UH One AN UH TWO" etc.

IF YOU MAKE A MISTAKE, TYPE THE [SPACE BAR] TO STOP & ERASE THE RECORDING. BUT ALWAYS LET THE COMPUTER END THE RECORDING YOU WANT TO KEEP. See the RECORD MUSIC (STOP & ERASE) command [SPACE BAR]. See also the RECORD MUSIC (START) command [SPACE BAR].

THE RELATIVE TO, ETC. NUMBER

The final prompt asks RELATIVE TO SEGMENT CLOCK 1:1 BEATS/MEASURE IS? Type a number from [1]-[32] then [RETURN].

This number relates to the possible notation of this segment, how it would look if displayed on the screen. The number entered is the number of QUARTER notes per measure. In 4/4 time at a segment clock of 1:4 there are 4 quarter notes per measure.

But ALL RECORD MUSIC (4) segments are recorded with a segment clock of 1:1. You may consider a displayed QUARTER note at this segment clock to be equivalent to a 16TH note. It would take sixteen 16TH notes to fill a 4/4 bar, so you might enter [16] in response to this prompt for 4/4 time.

THE NUMBER ENTERED FOR THIS PROMPT WILL NOT AFFECT THE SOUND OR PLAYBACK SPEED OF THE RECORD MUSIC (4) SEGMENT, ONLY ITS POTENTIAL NOTATION. The number you provide for this prompt may be changed when you give the EDIT RECORD MUSIC command [E] anyway. See the EDIT RECORD MUSIC command [E].

See also the TEMPO (MASTER) command [SHIFT][T], which allows GLOBAL control over the plaback speed of ALL segments in a song.

WHEN A RECORD MUSIC (4) SEGMENT IS ON THE SCREEN AND YOU TYPE [T], THE TIMING PROMPTS DISCUSSED ABOVE WILL APPEAR. THESE TIMING PROMPTS ALSO APPEAR AUTOMATICALLY THE FIRST TIME YOU SELECT (4) FROM THE MENU AFTER FRESHLY LOADING SONGSTEPPER OR MIDI DRUM SONGSTEPPER IN THE COMPUTER'S MEMORY.

That is, since recording a RECORD MUSIC (4) segment REQUIRES the information you supply in the TIMING A SEGMENT command [T] prompts, the FIRST time you call up the RECORD MUSIC (4) mode after loading SONGSTEPPER or MIDI DRUM SONGSTEPPER, these prompts will appear. This will happen the FIRST time, even if you merely want to play a RECORD MUSIC (4) segment that ALREADY has been recorded previously. (Remember, you can store songs on diskette and work on them over a period of days, etc.)

DEFAULT PROMPT VALUES

The WHICH DRUM SEGMENT? named, and the number provided for the HOW MANY DRUM SEGMENTS LONG? prompt will then become the DEFAULT values until you give the TIMING A SEGMENT command [T] again.

Anytime thereafter when you go to the RECORD MUSIC (4) mode, those TIMING values will be ASSUMED. That is, if you want to record many RECORD MUSIC (4) segments using the same TIMING values, this is possible. The computer will continue to provide the LAST TIMING values you enter for each new RECORD MUSIC (4) segment recorded.

THE SAME DRUMS (1) SEGMENT WITH THE SAME NUMBER OF MEASURES WILL ACCOMPANY ALL RECORDINGS OF RECORD MUSIC (4) SEGMENTS UNTIL YOU GIVE THE TIMING A SEGMENT COMMAND [T] TO CHANGE THESE TIMING VALUES.

WHEN YOU FIRST LOAD SONGSTEPPER OR MIDI DRUM SONGSTEPPER AND WISH TO MAKE RECORD MUSIC (4) RECORDINGS, MAKE SURE YOU HAVE A VALID DRUMS (1) SEGMENT IN MEMORY FIRST! REMEMBER, THE FIRST QUESTION THE TIMING PROMPT ASKS IS:

WHICH DRUM SEGMENT?

IF YOU GO TO THE RECORD MUSIC (4) MODE AND DO NOT HAVE A DRUMS (1) SEGMENT ALREADY PROGRAMMED, IT WILL BE NECESSARY TO GIVE THE RESET COMMAND BY TYPING [RUN STOP][RESTORE]. See the RESET command [RUN STOP][RESTORE].

START COMPOSING WITH DRUMS (1). YOU MUST HAVE ONE DRUMS (1) SEGMENT SAVED BEFORE YOU CAN CREATE ANY RECORD MUSIC (4) SEGMENTS, EVEN IF YOU DO NOT HAVE A DRUM MACHINE.

//

TUNE (START) -------------------------- [←]

EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type the [←] left-arrow key anytime an EDIT MUSIC (3), RECORD MUSIC (4) segment or the SCORE (5) is on the screen to send MIDI NUMBER 72 to ALL MIDI buses and channels.

This MIDI number 72 should cause each instrument connected to a MIDI BUS output jack to play and hold the note C one octave above Middle C.

This command DOES NOT AUTOTUNE your instruments. It simply "holds keys down" for you so you can individually tune your instruments' pitch level.

NOTE: Some MIDI instruments will cease to sound their note if you hit their AUTOTUNE button during this tuneup.

TO STOP TUNING, TYPE [f3].

//

TUNE (STOP) ---------------------------- [f3]

EDIT MUSIC (3), RECORD MUSIC (4), SCORE (5): Type the [f3] function key to stop the sounding of notes caused by the TUNE (START) command [←].

//

USER OPTION (DEFINE SYNC) ------------- [U]

SCREEN PROMPTS:	YOUR RESPONSE:
C-64 CLOCK DIVIDED BY ? 12	type [RETURN] or type [01-99] then [RETURN]
C-64 CLOCK OUT DIVIDED BY ? 4	type [RETURN] or type [01-99] then [RETURN]
SYNC CLOCK IN DIVIDED BY? 3	type [RETURN] or type [01-99] then [RETURN]
SYNC CLOCK OUT DIVIDED BY? 1	type [RETURN] or type [01-99] then [RETURN]

IN ALL CASES IN THE PROMPTS ABOVE A NUMBER APPEARS AFTER THE QUESTION MARK. YOU MAY SIMPLY TYPE [RETURN] TO ACCEPT THAT NUMBER, WHICH REPRESENTS CURRENT PROGRAMMING.

OR YOU MAY TYPE IN ANOTHER NUMBER [01-99] THEN [RETURN], TO CHANGE PROGRAMMING. ENTER ANY SINGLE DIGIT NUMBER WITH A "LEADING ZERO" AS INDICATED. TYPE 0, THEN A SINGLE DIGIT NUMBER IF YOU WISH TO ENTER A SINGLE DIGIT NUMBER.

PLEASE BE SURE YOU UNDERSTAND WHAT YOU ARE DOING. DO NOT CHANGE THESE NUMBERS JUST TO EXPERIMENT.

SHOULD YOU ACCIDENTALLY CHANGE ONE OF THESE NUMBERS, GO TO THE SONGSTEPPER MENU, TYPE [9] THEN [RETURN] TO GO TO THE DEFINE SYNC MODE.

THEN TYPE [H] THEN [RETURN]. THIS WILL "NOMINALIZE" THE SPECIAL "U" NUMBERS AND RETURN THE SYSTEM TO NORMALCY. ALL SYNC OPTIONS [H], [M], [L], [U] REMAIN AVAILABLE AFTER THIS. NOTHING IS DAMAGED.

The USER OPTION (DEFINE SYNC) command [U] operates following selection of option (9) DEFINE SYNC from the MENU. Go to the MENU page by typing the [f5] function key. When on the MENU page, Type [9] then [RETURN]. When the prompt asks:

SCREEN PROMPTS:	YOUR RESPONSE:
SYNC OUT H, M, OR L?	type [U] then [RETURN]

The first U prompt shown above will appear.

DO NOT EXPLORE THIS USER OPTION (DEFINE SYNC) COMMAND [U] SIMPLY OUT OF CURIOSITY! LEARN THIS SYSTEM THOROUGHLY BEFORE ATTEMPTING TO ALTER BASIC CLOCK CONFIGURATIONS!

For advanced users who wish to create non-standard clocks for particular applications, and to provide flexibility for expansion to clock requirements not yet conceived by current manufacturers, we have provided the U feature.

USING THE COMPUTER'S INTERNAL CLOCK

First, let's review the concept of a "clock." It takes a clock to drive SONGSTEPPER or MIDI DRUM SONGSTEPPER and make it play a song.

The computer supplies an internal clock. YOU USE THIS CLOCK WHEN YOU TYPE THE [f1] FUNCTION KEY.

THE FIRST TWO PROMPTS ARE APPLICABLE WHEN USING THE INTERNAL COMPUTER CLOCK TO DRIVE SONGSTEPPER OR MIDI DRUM SONGSTEPPER.

USING THE INTERNAL CLOCK

THE INTERNAL COMPUTER CLOCK IS SPLIT INTO TWO BRANCHES.

THE FIRST BRANCH OF THE INTERNAL CLOCK is called the "C-64 CLOCK," The C-64 CLOCK is the result of a DIVISION of the internal clock. The number of this divisor determines the overall speed of the C-64 clock.

THE SECOND BRANCH OF THE INTERNAL CLOCK is called the "C-64 CLOCK OUT." The C-64 CLOCK OUT is the result of another independent DIVISION of the internal clock. The number of this divisor determines the clock rate that appears at the CLOCK OUT jack on the SONG PRODUCER.

THE FIRST PROMPT: C-64 CLOCK DIVIDED BY?

THE FIRST U PROMPT is the C-64 CLOCK DIVIDED BY? prompt. The number entered in response to this prompt is the number the internal clock is DIVIDED BY to create the INTERNAL C-64 CLOCK.

Default programming for this prompt is the number 12. If you provide a number larger than 12 for this prompt, the C-64 CLOCK will be slower, and songs will play slower when you type the [f1] function key. Change of the number in this prompt does NOT cause the clock routed to the CLOCK OUT jack on the SONG PRODUCER to change.

THE SECOND PROMPT: C-64 CLOCK OUT DIVIDED BY?

THE SECOND U PROMPT is the C-64 CLOCK OUT DIVIDED BY? prompt. It is for the OTHER branch of the internal computer clock. This is the C-64 CLOCK OUT. The number you provide here is the number that the internal clock is DIVIDED BY to produce the C-64 CLOCK OUT that appears at the CLOCK OUT jack.

Default programming for this prompt is 4. If you provide a number larger than 4 for this prompt, the clock that appears at the CLOCK OUT jack on the SONG PRODUCER will be slower. Should you choose to divide by 2 for this prompt, on the other hand, the CLOCK OUT jack would provide 192 pulses per quarter note rather than 96 as it normally does in H or High mode.

The number that appears with this prompt changes when you change your response to the simpler DEFINE SYNC prompt SYNC OUT H, M, OR L? If you specify H, this U prompt will display 4; for M, 8; for L, 16. These H, M, and L division numbers account for the clocks H=96, M=48, and L=24 that appear at the CLOCK OUT jack. If you choose to divide by a weird number at this U prompt, you would get a weird clock pulses-per-beat rate at the CLOCK OUT jack!

When you select H rather than U for the (9) DEFINE SYNC option in the MENU this automatically provides a divisor for this U prompt to create a c-64 clock at the CLOCK OUT that is 96 pulses-per-quarter. M=48 and L=24. Always select H to provide a 96 pulses-per-quarter clock if syncing to tape (see below).

USING AN EXTERNAL CLOCK

IF YOU CONNECT AN EXTERNAL CLOCK to the CLOCK IN jack on the SONG PRODUCER, THIS EXTERNAL CLOCK MAY BE USED TO PLAY A SONG. Type [SHIFT][f1], the [f2] function key when the SCORE (5) is on the screen, and the legend SYNC MODE will appear. The song will start ONLY when the external clock starts!

THE SYSTEM IS IN THE SYNC MODE WHEN AN EXTERNAL CLOCK TAKES THE PLACE OF THE INTERNAL COMPUTER CLOCK. THE COMPUTER'S INTERNAL CLOCK IS NOT USED IN THE SYNC MODE.

ONLY THE THIRD AND FOURTH PROMPTS ARE APPLICABLE WHEN IN THE SYNC MODE. THE FIRST TWO PROMPTS HAVE NO EFFECT WHEN YOU USE AN EXTERNAL CLOCK.

THE THIRD PROMPT: SYNC CLOCK IN DIVIDED BY?

THE THIRD U PROMPT is the SYNC CLOCK IN DIVIDED BY? prompt. The number provided for this prompt divides the EXTERNAL or SYNC CLOCK connected to the CLOCK IN jack on the SONG PRODUCER.

In normal usage, always provide an external clock with 96 pulses per quarter note. Otherwise, songs may play back too slowly. This U prompt's divisor number might be changed to make a song synchronize to an external clock that has a NONSTANDARD pulses-per-quarter number.

THE FOURTH PROMPT: SYNC CLOCK OUT DIVIDED BY?

THE FOURTH U PROMPT is the SYNC CLOCK OUT DIVIDED BY? prompt. It provides another, independent division of the external SYNC CLOCK inserted into the CLOCK IN jack when in SYNC MODE.

The clock that results from this division of the external SYNC CLOCK appears at the CLOCK OUT jack. For example, if you connect a 96 pulses-per-quarter clock to CLOCK IN, and program a division by "2" for this prompt, the 96 clock will play the song, BUT there will be a 48 pulses-per-quarter clock available at the CLOCK OUT jack for your use in synchronizing another device that requires a 48 clock.

The number that appears with this U prompt changes automatically with a change of choice of H, M, or L, for the simpler SYNC OUT H, M, OR L? prompt. IF YOU HAVE PROVIDED A 96 pulses-per-quarter external clock, and connected it to the CLOCK IN jack, choice of H will cause a U division by 1 and yield the same 96 pulses-per-quarter clock at the CLOCK. M divides by 2 to provide a 48 pulses-per-quarter clock at the CLOCK OUT jack. L provides a 24 pulses-per-quarter clock.

ALTERNATE ACCESS TO DEFINE SYNC MODE

All the prompts relating to system clocks and sync can be accessed by going to the MENU and selecting alternative (9) as described above.

ALSO, it is possible to access these prompts when the SCORE (5) is on the screen. To do so, type [SHIFT][S] when the SCORE (5) is on screen, type [U] then [RETURN], and answer prompts described above.

SYNCING TO A TAPE RECORDER

It is possible to record the C-64 CLOCK coming out of the CLOCK OUT jack on the SONG PRODUCER onto a separate track on a multitrack tape recorder, as you record a song.

This "tape clock" recorded on tape may then be used as an external clock to drive SONGSTEPPER or MIDI DRUM SONGSTEPPER.

Rewind the tape to the beginning of this clock track.

Take the output of that clock track on the tape recorder and route it to the CLOCK IN on the SONG PRODUCER.

Use the SYNC mode on the SCORE (5). Type [SHIFT][F1].

When you roll the tape, the clock track on the tape will "drive" the song in the SONG PRODUCER in sync with the taped clock track.

Record EIGHT MORE VOICES AND TWO MORE DRUMS COLUMNS, etc in perfect sync with the song or voices, etc. recorded when the "tape clock" was first recorded on tape.

THIS TECHNIQUE ALLOWS RECORDING OF UP TO 8 SONGSTEPPER VOICES AND TWO SONGSTEPPER DRUM TRACKS ON EACH TRACK OF YOUR TAPE RECORDER (LESS ONE TRACK FOR RECORDING THE SYNC CLOCK).

It is MOST important to select H for the SYNC OUT H, M, L, prompt when syncing to tape. This makes the clock at the CLOCK OUT jack a 96 pulses-per-quarter clock. Put this 96 pulses-per-quarter clock on tape. Then use this clock as an external clock by connecting the output of the taped clock track into the CLOCK IN on the SONG PRODUCER.

REMEMBER, SONGSTEPPER OR MIDI DRUM SONGSTEPPER NEEDS A HIGH RESOLUTION 96 PULSES PER QUARTER NOTE EXTERNAL CLOCK, OR PLAYBACK WILL SLOW DOWN.

//

VAMP ON ---------------------------------- [f5]

SCORE (5): This command is valid ONLY when the SCORE (5) is in the PLAY MODE.

The VAMP ON command [f5] causes all SEGMENTS that are PLAYING when the command is given to play repeatedly until further action is taken.

When the SCORE (5) is PLAYING, type the [f5] function key.

The SEGMENTS CURRENTLY PLAYING in EACH SCORE (5) column will CONTINUE TO PLAY, and PLAY REPEATEDLY until you give the VAMP OFF command [f7] by typing the [f7] function key, or STOP the entire SCORE (5) by typing [f3].

Synchronization of the beginnings and ends of segments during repetitions is YOUR responsibility. That is, all segments REPEAT freely. There is NO automatic realignment that restarts ALL segments when a particular segment reaches its end and repeats.

You may program the SCORE (5) to cause the BEGINNINGS of all segments to coincide for all repeats when you give this command; or NOT, depending on segment LENGTHS, repetition number for the SCORE (5) entry for each segment involved, etc. in each SCORE (5) column.

FOOTSWITCH JACK #1

Connect a footswitch (e.g. MOOG model 1121) to the FOOTSWITCH 1 jack of the SONG PRODUCER to allow foot actuation of the VAMP ON command [f5]. In this case, stepping on the footswitch is equivalent to typing the [f5] function key.

See also the VAMP OFF command [f7] below.

//

VAMP OFF -------------------------------- [f7]

SCORE (5): This command is valid ONLY when the SCORE (5) is in the PLAY MODE.

The VAMP OFF command [f7] causes an IMMEDIATE ADVANCE to the ENTRY on the NEXT HIGHER NUMBERED SCORE LINE in each of the ten SCORE (5) columns.

AT ANY TIME the SCORE (5) is PLAYING type the [f7] key.

The SCORE (5) will IMMEDIATELY ADVANCE to the NEXT ENTRY in EACH of the ten SCORE (5) columns.

The system interprets this command LITERALLY. It goes to the NEXT ENTRY in each column. If, in a particular column, you have been repeating (VAMPING ON) a segment that is embedded in a SECTION, you will go to the NEXT ENTRY within that SECTION when the VAMP OFF command [f7] is given. It is advisable to prepare SEGMENT entries on the SCORE (5) that are the same length, or clearly repeat to make musical sense, in order to use the VAMPING feature.

So, making sense of what these NEXT ENTRIES following this command will cause MUSICALLY is YOUR responsibility. Effective use of the VAMP ON command [f5] and the VAMP OFF command [f7] requires thoughtful and accurate programming, and intelligent timing of WHEN to give the command as the SCORE (5) plays.

The most obvious use of the VAMP OFF command [f7] is to ESCAPE from the endless repetition of SCORE (5) segments caused after giving the VAMP ON command [f5] above.

FOOTSWITCH JACK #2

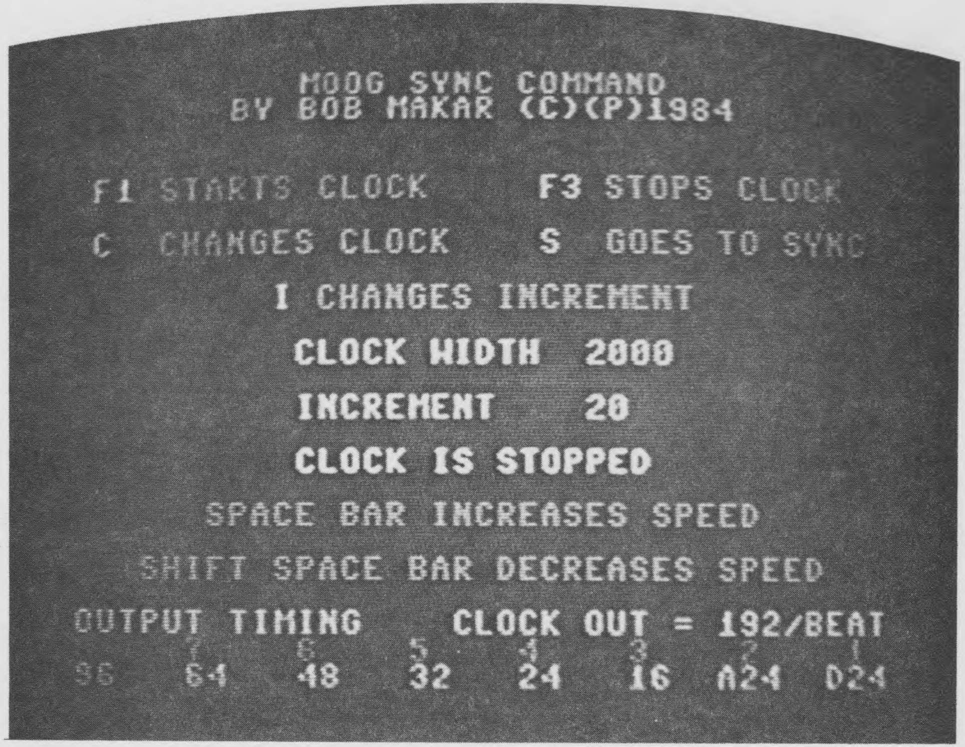
Place a footswitch (e.g. MOOG model 1121) in the FOOTSWITCH 2 jack on the SONG PRODUCER to allow foot actuation of the VAMP OFF command [f7]. In this case, stepping on the footswitch is equivalent to typing the [f7] function key.

See also the VAMP ON command [f5] above.

//

THIS CONCLUDES THE DICTIONARY OF COMMANDS FOR SONGTEPPER AND MIDI DRUM SONGSTEPPER.

SYNC COMMAND INTRODUCTION



```
             MOOG SYNC COMMAND
         BY BOB MAKAR (C)(P)1984

  F1 STARTS CLOCK        F3 STOPS CLOCK

  C  CHANGES CLOCK       S  GOES TO SYNC

           I CHANGES INCREMENT

           CLOCK WIDTH  2000

           INCREMENT    20

           CLOCK IS STOPPED

        SPACE BAR INCREASES SPEED

     SHIFT SPACE BAR DECREASES SPEED

OUTPUT TIMING      CLOCK OUT = 192/BEAT
        7     6     5     4     3    2    1
96     64    48    32    24    16  A24  D24
```

SYNC COMMAND INTRODUCTION

THIS SECTION EXPLAINS HOW THE SONG PRODUCER MAY BE USED AS A MASTER CLOCK TO SYNCHRONIZE SEVERAL DEVICES, SUCH AS DRUM MACHINES, SEQUENCERS, ETC., SIMULTANEOUSLY.

Please read the GETTING STARTED and MASTER MENU sections in this manual before reading this section.

LOADING SYNC COMMAND INTO MEMORY

From scratch:

Turn the computer ON.

Insert the MASTER PROGRAM DISKETTE in the disk drive.

Close the disk drive door.

Type:

```
LOAD"*",8,1
```

You must produce EXACTLY the eleven characters shown above, and nothing else. That is, type [L], then [O], then [A], then [D], etc. The quote mark " requires use of the [SHIFT] key.

Use the [INST DEL] key to delete the last entry made if you make typing errors.

When the screen matches what is shown above:

Type [RETURN]

From:

THE MASTER MENU

The computer will take a few seconds and then dislay the MASTER MENU. Since you wish to use SYNC COMMAND, you should type in its number on the MASTER MENU, as shown below:

SCREEN PROMPTS:	YOUR RESPONSE:
PROGRAM NUMBER?	type [3] then [RETURN]

The disk drive light will turn ON. Do not disturb until this light goes OFF. It takes about 15 seconds to load SYNC COMMAND.

THE SYNC COMMAND PAGE

The video screen before you tells the story of SYNC COMMAND.

SYNC COMMAND is an elaborate MASTER CLOCK, or a CLOCK DIVIDER. SYNC COMMAND produces MANY clock signals that stay perfectly SYNCHRONIZED to each other.

SYNC COMMAND OUTPUT JACKS

As indicated at OUTPUT TIMING, at the bottom of the video page, clock signals at various numbers of PULSES PER QUARTER are available at SONG PRODUCER output jacks as follows:

CLOCK OUT = 192 PULSES PER QUARTER NOTE

DRUM TRIGGER OUTS

OUT 8 = 96 PULSES PER QUARTER NOTE *

OUT 7 = 64 PULSES PER QUARTER NOTE

OUT 6 = 48 PULSES PER QUARTER NOTE *

OUT 5 = 32 PULSES PER QUARTER NOTE

OUT 4 = 24 PULSES PER QUARTER NOTE *

OUT 3 = 16 PULSES PER QUARTER NOTE

OUT 2 = 24 PULSES PER QUARTER NOTE (ADVANCED)

OUT 1 = 24 PULSES PER QUARTER NOTE (DELAYED)

(OTHERS)

(MIDI) W-OUT = 24 PULSES PER QUARTER NOTE *

The common industry standard clock PULSE PER QUARTER NOTE divisions 96, 48, and 24 are available at jacks indicated with an *.

The DELAYED, D24, and ADVANCED, A24, versions of the 24 PULSES PER QUARTER clock provide exactly what is implied.

These A24 and D24 PULSES PER QUARTER clocks are OFFSET RELATIVE to the standard 24 PULSES PER QUARTER clock that is available at DRUM TRIGGER OUTS jack #4.

The A24 clock signal occurs slightly in ADVANCE of the standard 24 clock. THE D24 clock signal is slightly BEHIND the standard 24 clock.

All three of these 24 PULSES PER QUARTER clocks remain in sync with each other, however. All 24 clocks run at the same speed; they just START at slightly different times.

The ADVANCED 24 clock, A24 is provided because some drum machines are slow to respond when driven by an external clock, making the drum track sound "behind the beat." Use the A24 clock to "offset" or ADVANCE the clock sent to such a device to correct such a problem.

The DELAYED 24 clock, D24 allows you to drive any device slightly BEHIND the beat, relative to the other SYNC COMMAND clocks.

The NONSTANDARD PULSES PER BEAT clocks at DRUM TRIGGER OUTS jacks 7, 5, and 3, allow you to drive sequencers, drum machines, etc. in clock divisions that are RATIOS of each other, for experimental music.

SYNC COMMAND MASTER CLOCK: START/STOP

To be useful, you must be able to START and STOP all SYNC COMMAND clocks SIMULTANEOUSLY. You do so by STARTING/STOPPING the MASTER CLOCK.

> Type the [f1] function key to START ALL SYNC COMMAND CLOCKS.
>
> Note, in the middle of the screen the indication:
>
> CLOCK IS RUNNING
>
> Type the [f3] function key to STOP ALL SYNC COMMAND CLOCKS.
>
> Note, the change to:
>
> CLOCK IS STOPPED

The "CLOCK" referred to is the MASTER SYNC COMMAND CLOCK that produces ALL the clocks available at the various outputs.

SYNC COMMAND CLOCK WIDTH: CLOCK SPEED

Since the MASTER CLOCK in a SYNC arrangement controls the overall SPEED or TEMPO of your song, it is important to have precise control over the SPEED of the MASTER CLOCK.

SYNC COMMAND provides a wide span of master clock speeds:

THE FASTEST CLOCK SPEED = 300

THE SLOWEST CLOCK SPEED = 60,000

This arrangement is consistent with TEMPO and TIMING control throughout SONG PRODUCER software.

Remember:

LITTLE THINGS (300) MOVE FAST

BIG THINGS (60,000) MOVE SLOW.

The EXTRAORDINARY span of possible TEMPOS from 300 to 60,000 provides excellent RESOLUTION for tempo changes. In fact, there are just slightly less than 60,000 possible tempos in SYNC COMMAND!

If you want to make a VERY small change of tempo, this can be done.

CHANGING CLOCK SPEED (WIDTH) BY INCREMENT

Notice that the CLOCK WIDTH is 2000 when the SYNC COMMAND PAGE is first loaded into memory.

And the INCREMENT is 20.

Type the [SPACE BAR] once.

Look at the screen.

Notice that the CLOCK WIDTH is DECREASED by the INCREMENT of 20 to a CLOCK WIDTH of 1980 .

Type and HOLD the [SHIFT] key down.

While holding [SHIFT] down type the [SPACE BAR] once.

Look at the screen.

The CLOCK WIDTH is INCREASED by the INCREMENT OF 20 to a CLOCK WIDTH of 2000.

Type [I] for INCREMENT.

SCREEN PROMPTS:	YOUR RESPONSE:
NEW INCREMENT?	type [5] then [0] then [RETURN]

Look at INCREMENT on the screen.

The new value for INCREMENT is the value you typed, "50".

Repeat the exercise above, DECREASING/INCREASING the CLOCK WIDTH.

THE "INCREMENT" OF CHANGE MAY BE PROGRAMMED BY YOU TO BE ANY NUMBER FROM 1 THROUGH 5000.

A change of INCREMENT changes the "step size" of CLOCK WIDTH changes available using the [SHIFT] and [SPACE BAR] keys.

Note that the video screen summarizes the procedure:

I CHANGES INCREMENT

SPACE BAR INCREASES SPEED

SHIFT SPACE BAR DECREASES SPEED

CHANGING CLOCK WIDTH (SPEED) DIRECTLY

There is ANOTHER way to change the CLOCK WIDTH number:

Type [C].

SCREEN PROMPTS:	YOUR RESPONSE:
NEW CLOCK WIDTH?	type [300-60,000] then [RETURN]

You MUST type a number within the allowable span. Then type [RETURN] to enter this number.

THE RANGE OF POSSIBLE CLOCK WIDTHS IS FROM 300 THROUGH 60,000.

REMEMBER:

SMALL IS FAST

LARGE IS SLOW

After you type the new CLOCK WIDTH number and type [RETURN], the SYNC COMMAND PAGE will reappear with the new CLOCK WIDTH number.

The video page reminds you how to change the clock (CLOCK WIDTH):

C CHANGES CLOCK

The remaining command, "S" takes you to a new video page, the SYNC MODE PAGE.

THE SYNC MODE PAGE

THE SYNC MODE: DIVIDING AN EXTERNAL CLOCK

If you wish to use the SONG PRODUCER to DIVIDE the clock signal of an EXTERNAL CLOCK, such as the CLOCK OUT of a drum machine, etc. then:

Type the [S] key.

THE SYNC MODE PAGE IS NOW DISPLAYED ON THE SCREEN.

Now the internal SYNC COMMAND clock is NOT used.

You must provide an EXTERNAL CLOCK, by connecting the CLOCK OUT of an external device such as: a clock track recorded on tape, a drum machine or sequencer, to the CLOCK IN jack of the SONG PRODUCER.

When this is done, and the EXTERNAL clock is STARTED, clocks will appear at the CLOCK OUT and DRUM TRIGGER OUTS jacks.

When the EXTERNAL clock is STOPPED, or when any key on the computer keyboard is typed, ALL clocks at SONG PRODUCER jacks STOP.

EACH OUTPUT JACK PROVIDES A DIVISON OF THE EXTERNAL CLOCK

As this video page shows, there is a CLOCK DIVIDER for each numbered DRUM TRIGGER OUTS jack 1-8:

CLOCK OUT = THE EXTERNAL CLOCK

DRUM TRIGGER OUTS

OUT 8 = EXTERNAL CLOCK DIVIDED BY 2

OUT 7 = EXTERNAL CLOCK DIVIDED BY 3

OUT 6 = EXTERNAL CLOCK DIVIDED BY 4

OUT 5 = EXTERNAL CLOCK DIVIDED BY 6

OUT 4 = EXTERNAL CLOCK DIVIDED BY 8

OUT 3 = EXTERNAL CLOCK DIVIDED BY 12

OUT 2 = EXTERNAL CLOCK DIVIDED BY A8 (ADVANCED)

OUT 1 = EXTERNAL CLOCK DIVIDED BY D8 (DELAYED)

(OTHERS)

(MIDI) W-OUT = EXTERNAL CLOCK DIVIDED BY 8

A little arithmetic will show you that, if you are in the SYNC MODE, and put an EXTERNAL clock with 192 PULSES PER QUARTER NOTE into the CLOCK IN of the SONG PRODUCER, something useful happens.

In this case, the CLOCK OUT jack, W-OUT MIDI jack, and jacks labeled DRUM TRIGGER OUTS 1-8 will provide clocks with EXACTLY the number of PULSES PER QUARTER NOTES as those jacks described in the section above titled:

"SYNC COMMAND OUTPUT JACKS"

Review that section to confirm this.

SYNC TO TAPE

So, you may use the INTERNAL clock of SYNC COMMAND to synchronize devices whose audio output you are recording.

If you wish to record a CLOCK TRACK along with the audio tracks, record the signal coming from CLOCK OUT on the SONG PRODUCER. This is a 192 PULSES PER QUARTER clock signal. Make this your clock for the clock track.

Later, you may wish to sync devices again, to play MORE audio tracks that are SYNCHRONIZED by the CLOCK TRACK on tape.

So you take the CLOCK TRACK signal coming from the CLOCK TRACK you recorded on tape, and put it into the CLOCK IN of the SONG PRODUCER. The taped CLOCK is your EXTERNAL clock.

When you play the tape, the devices being synched to this CLOCK TRACK will START when the CLOCK TRACK starts.

IT IS NO ACCIDENT THAT WHEN THE INTERNAL SYNC COMMAND CLOCK IS USED, THE CLOCK OUT JACK PROVIDES A CLOCK WITH 192 PULSES PER QUARTER NOTE.

NOTE THAT THE "DIVISORS" FOR AN EXTERNAL CLOCK CONNECTED TO THE SONG PRODUCER CLOCK IN JACK PRODUCE THE SAME CLOCKS THE INTERNAL CLOCK WOULD HAVE PRODUCED AT THE OUTPUT JACKS, SUCH AS DRUM TRIGGER OUTS, ETC. . . IF . . . IF . . .IF . . . YOU PROVIDE AN EXTERNAL CLOCK WITH 192 PULSES PER QUARTER NOTE.

CLOCK DISABLE JACKS

These jacks input/output signals required for clock DISABLE on certain Roland products.

When the SYNC COMMAND (or SONGSTEPPER) INTERNAL clock is ON, the CLOCK DISABLE OUT jack outputs a positive GATE. When the clock is OFF, the CLOCK DISABLE OUT jack outputs a switch to GROUND.

When an EXTERNAL clock is connected to the CLOCK IN, a switch to GROUND presented to the CLOCK DISABLE IN is interpreted by SONG PRODUCER as a DISABLE clock signal, required to "stop" the external clock.

THIS CONCLUDES THE SYNC COMMAND INTRODUCTION. AND THIS MANUAL, FOR THE TIME BEING.